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THE NATIONAL GEOGRAPHIC MAGAZINE

OCTOBER, 1919

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To carry out the purpose for which it was founded thirty-one years ago, the National Geographic Society publishes this Magazine. All receipts from the publication are invested in the Magazine itself or expended directly to promote geographic knowledge and the study of geography. Articles or photographs from members of the Society, or other friends, are desired. For material that the Magazine can use, generous remuneration is made. Contributions should be accompanied by an addressed return envelope and postage, and be addressed: Editor, National Geographic Magazine, 16th and M Streets, Washington, D. C.

Important contributions to geographic science are constantly being made through expeditions financed by funds set aside from the Society's income. For example, immediately after the terrific eruption of the world's largest crater, Mt. Katmai, in Alaska, a National Geographic Society expedition was sent to make observations of this remarkable phenomenon. So important was the completion of this work considered that four expeditions have followed and the extraordinary scientific data resultant given to the world. In this vicinity an eighth wonder of the world was discovered and explored—"The Valley of Ten Thousand Smokes," a vast area of steaming, spouting fissures, evidently formed by nature as a huge safety-valve for erupting Katmai. By proclamation of the President of the United States, this area has been created a National Monument. The Society organized and supported a large party, which made a three-year study of Alaskan glacial fields, the most remarkable in existence. At an expense of over $50,000 it has sent a notable series of expeditions into Peru to investigate the traces of the Inca race. The discoveries of these expeditions form a large share of the world's knowledge of a civilization which was waning when Pizarro first set foot in Peru. Trained geologists were sent to Mt. Pelee, La Soufriere, and Messina following the eruptions and earthquakes. The Society also had the honor of subscribing a substantial sum to the historic expedition of Admiral Peary, who discovered the North Pole April 6, 1909. Not long ago the Society granted $20,000 to the Federal Government when the congressional appropriation for the purchase was insufficient, and the finest of the giant sequoia trees of California were thereby saved for the American people and incorporated into a National Park.

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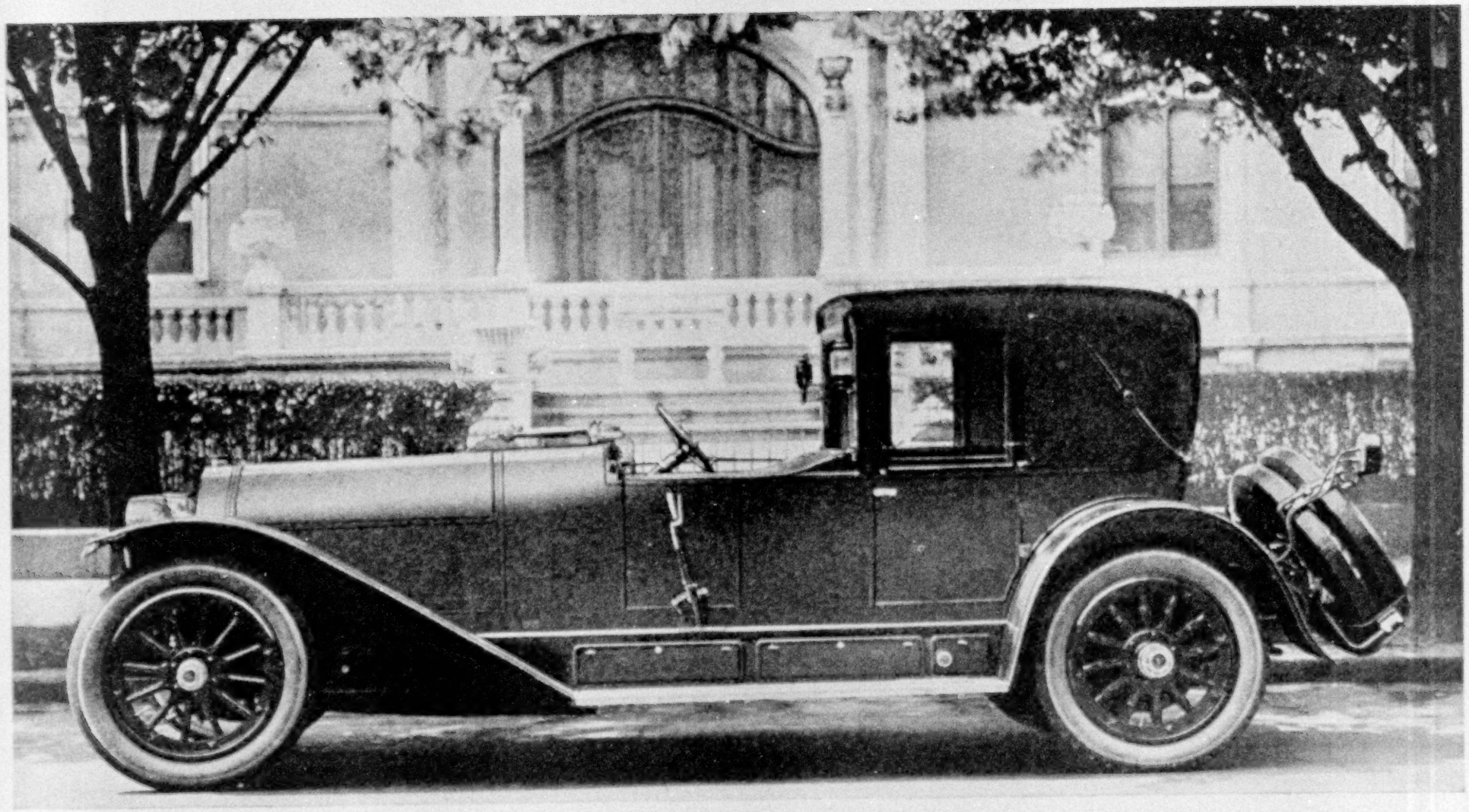

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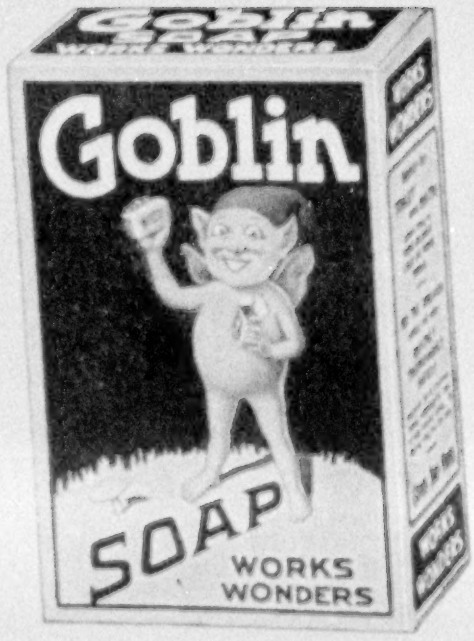

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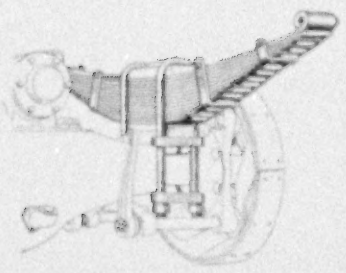
—In Marketing Livestock



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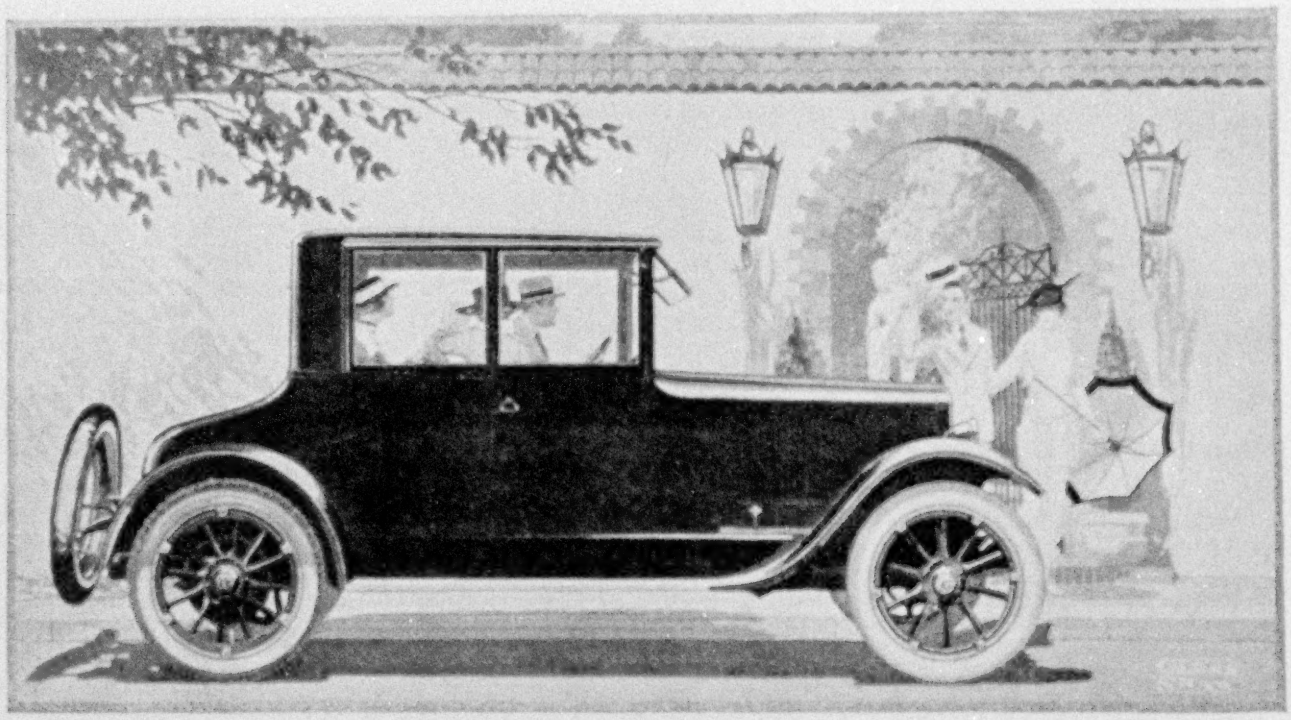

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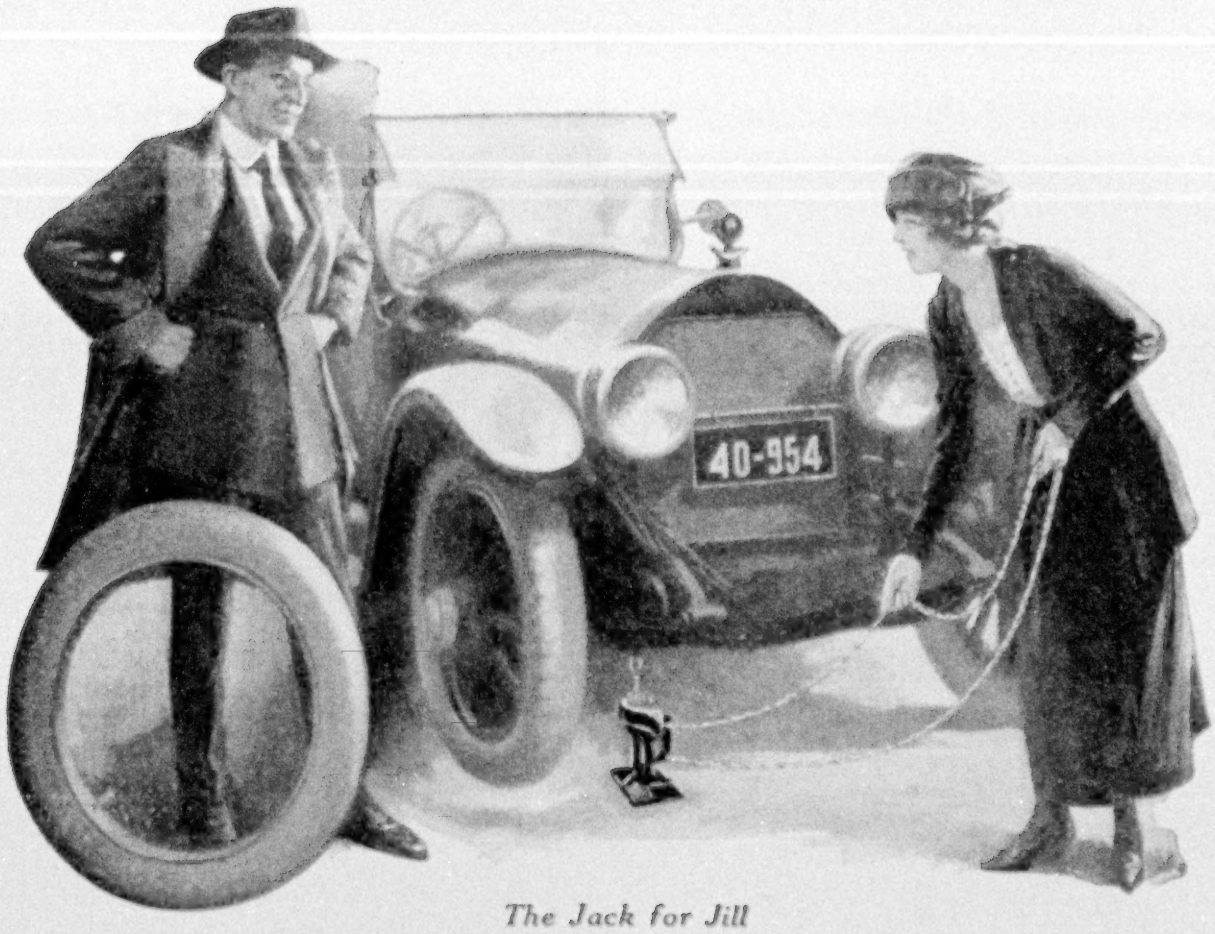

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Weed Chain-Jack

It works so easily that it's no trick at all for even the girls and children to operate it—Simply a few easy pulls on its chain lifts or lowers the heaviest car while you stand erect. Up or down—there's no labor.

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Never gets out of order. Quickly adjusted to any required height by lifting the screw and spinning the corrugated "collar" shown in the illustration. ***Try it yourself***—you will never be satisfied with any other jack.

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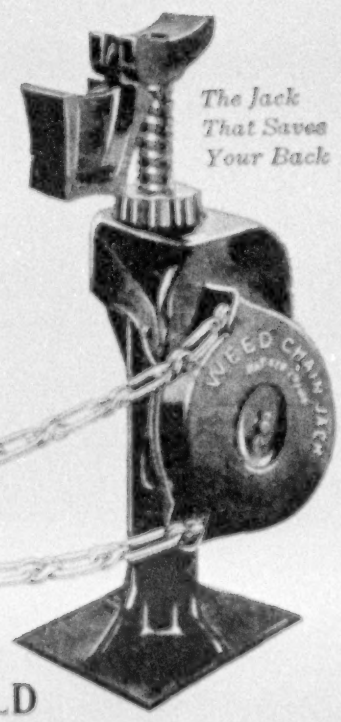
The 8 inch and 10 inch sizes are made with an auxiliary step as illustrated. When in operative position this step adds two inches to the height of the jack.



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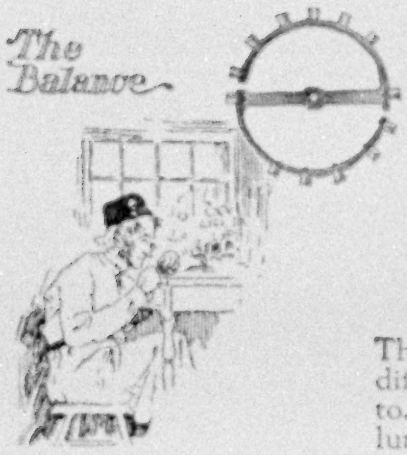

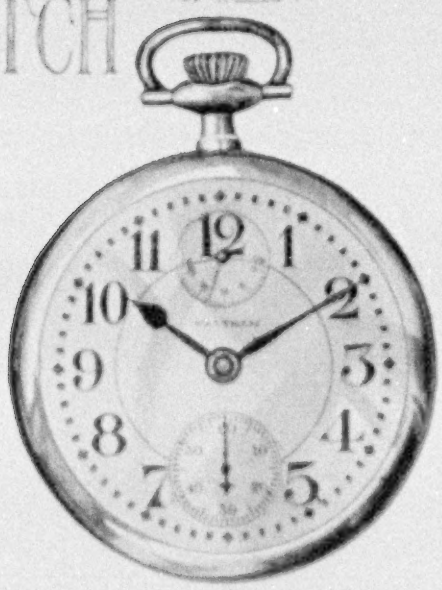

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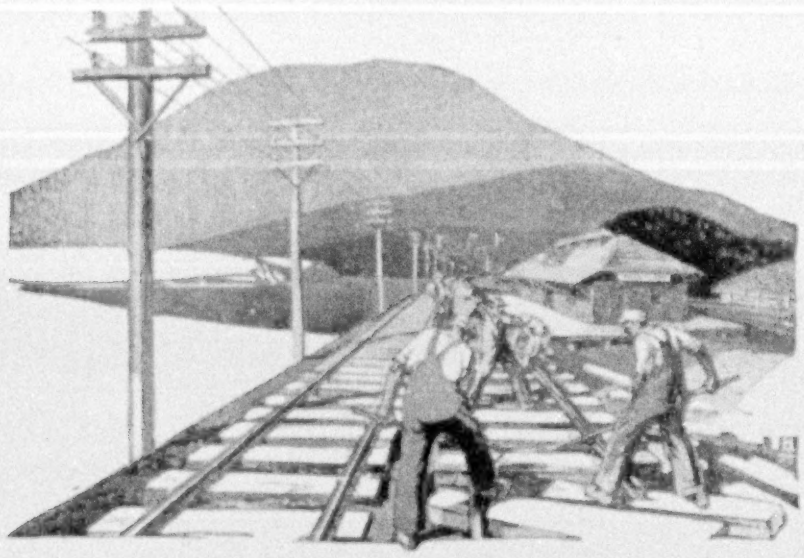

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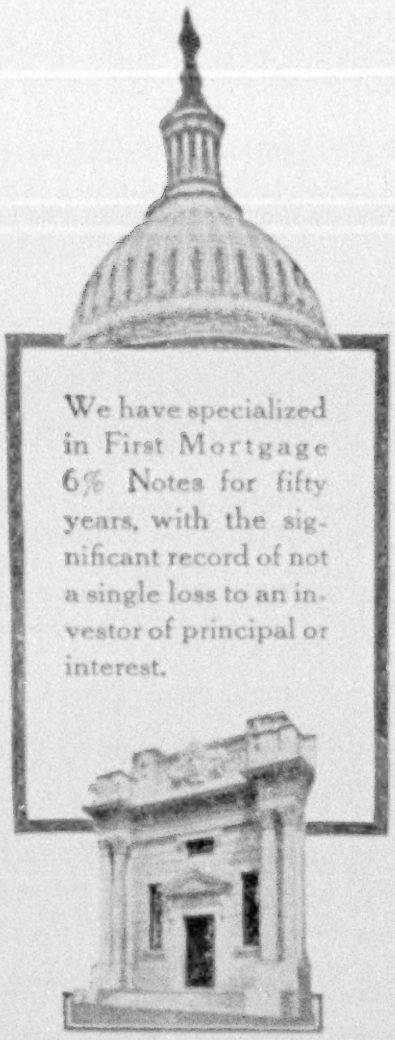

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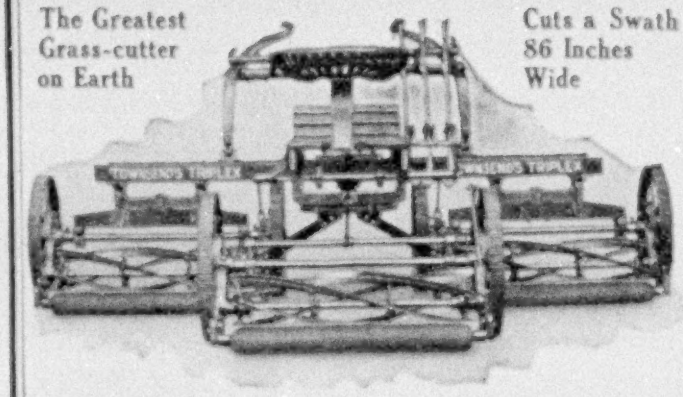

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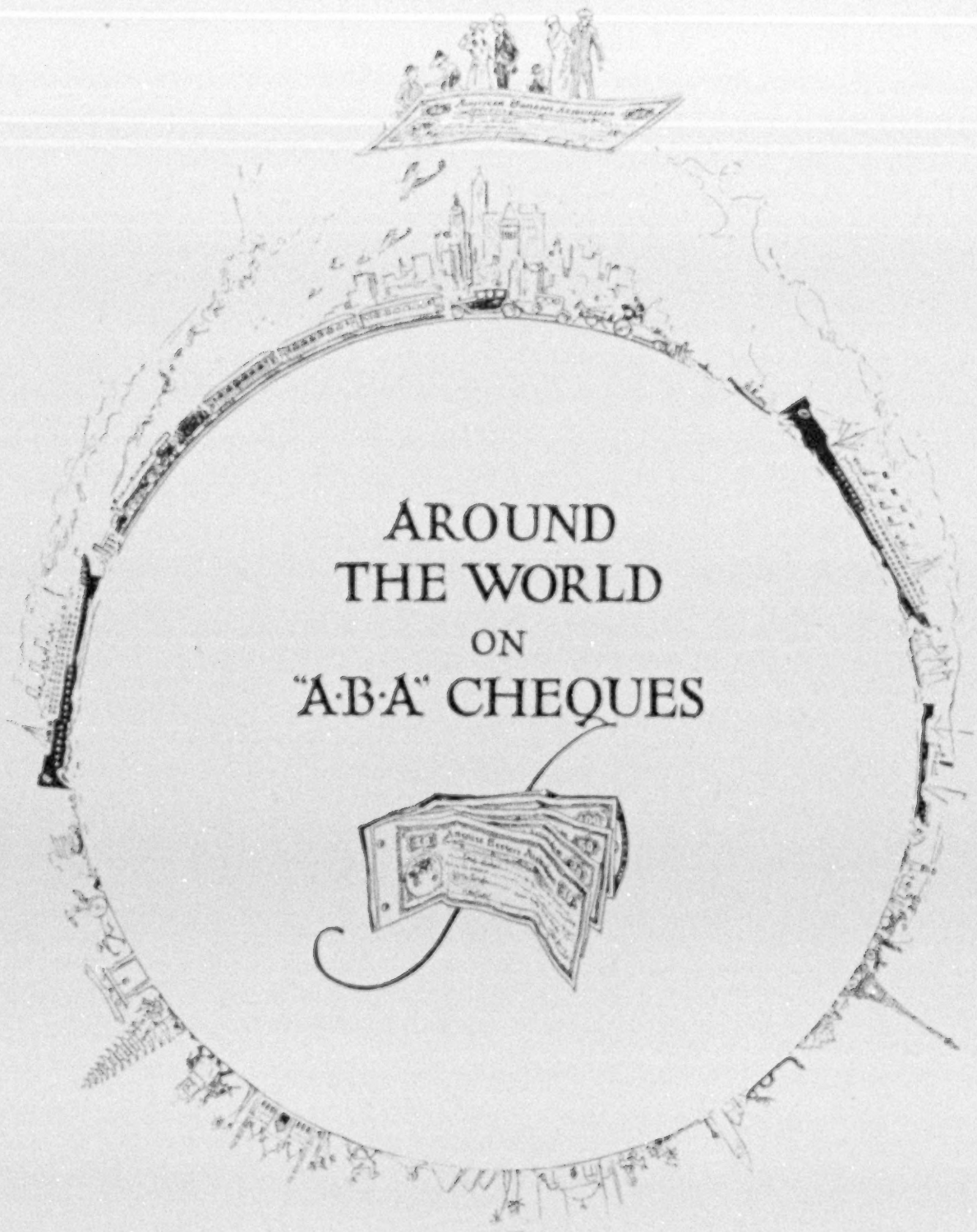

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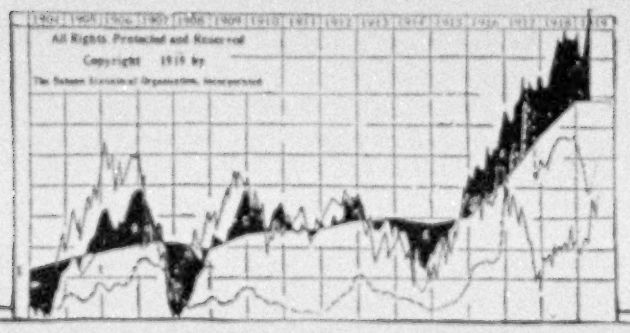

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A VANISHING PEOPLE OF THE SOUTH SEAS

The Tragic Fate of the Marquesan Cannibals, Noted for Their Warlike Courage and Physical Beauty

BY JOHN W. CHURCH

THREE thousand years or more ago a horde of savages drove their war canoes ashore on a group of volcanic islands lying in the South Pacific between 8° and 11° south latitude and 138° and 141° west longitude.

Who they were or why they came; what of religion, custom, and tradition they brought with them on their remarkable journey across the ocean, remains almost entirely hidden, probably forever, in the misty realm of conjecture.

That they formed part of that hegira from the Asiatic Archipelago which peopled so many islands of the South Seas with cannibal savages is established beyond doubt; and it has been asserted that the Marquesans were the first of the wanderers to leave their native land.

Philology has demonstrated the link existing between all the Polynesians inhabiting the South Pacific from Hawaii to the Malay Peninsula, and offers the interesting suggestion that Hiva, the native title for the Marquesas and incorporated in the names of three of the group (Nukuhiva, Fatuhiva, and Hivaoa), is but a corruption of Siva, the ancient worship of Java.

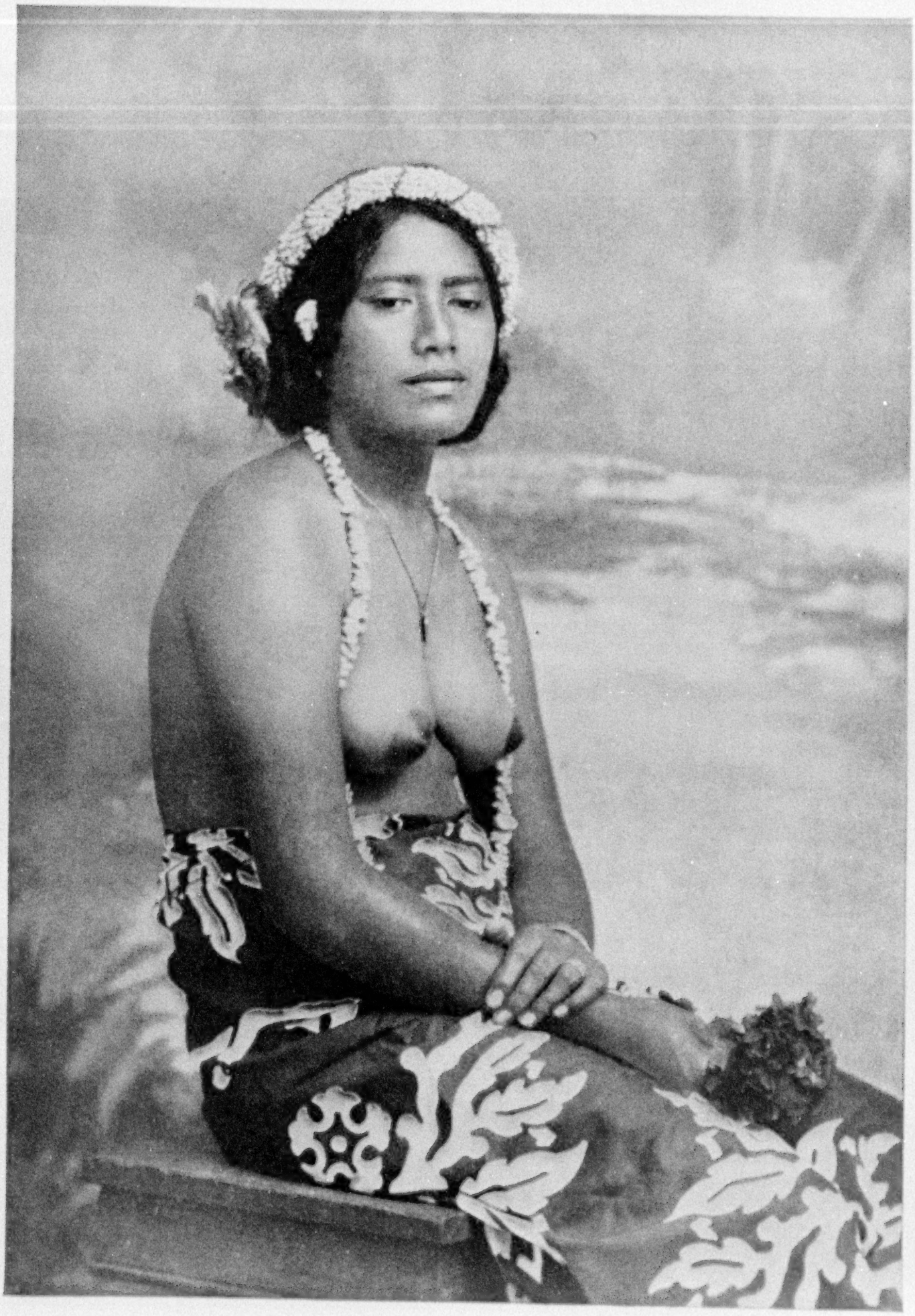
Of records or traditions of their life in their adopted home prior to their discovery by Mendana, the present-day Marquesan is lamentably ignorant. I was informed that one of the few investigators who have visited this remote group secured, some fifty years ago, a *matu tatua*, or family genealogy, running back 135 generations, or about 4,000 years!

GALLANT DISCOVERER NAMES ISLANDS FOR HIS PATRON'S WIFE

My efforts to verify this remarkable feat of Marquesan memory proved entirely fruitless. Possessing no written language, having allowed their *maies*, or sacred groves, to fall into decay, and, unlike the Tahitians, neglected to keep a record of their families and traditions by a system of *orero*, or bards charged with rehearsing and teaching them to each succeeding generation, the various tribes have lost practically all knowledge of their early history.

In the year 1595 a Spanish fleet under the command of Alvara Mendana, sailing from South America in search of gold, discovered Fatuhiva, the southernmost of the eleven islands comprising the group.

With commendable gallantry, the Spanish captain named the group Illas Marquesas de Mendoza, in honor of the wife of his patron, Don Garcia Hurtad de



Photograph by L. Gauthier

A DAUGHTER OF A DYING RACE

Beautiful, luxuriant hair, fine eyes, perfect teeth, a slender, graceful form, a skin of velvet texture and unblemished surface—these are the physical attributes of the few Marquesannes who survive as worthy representatives of a people seared by the sins of the white man.

Mendoza, Viceroy of Peru. Hanavave, the bay in which the voyagers first dropped anchor, Mendana called Bay of the Virgins, and, being a keen observer of savage habits and customs, his choice of a designation for a Marquesan village leads me to believe the doughty captain had a well-developed sense of humor.

Only the three lower islands were visited by the Spaniards. These were christened Santa Magdalena, Dominica, and Santa Christina. The northern units of the group, "discovered" at various times during the ensuing two centuries by half a dozen voyagers, including our own Admiral Porter, in 1813, were given "Christian" names, as were many of the fifty-odd bays which indent their shores.

The attempt to replace the native terms proved futile in almost every instance, and today the individual islands are known by their original designations. The only name to stand the acid test of time was the record of Mendana's gallantry, and this was shortened to "Marquesas" for actual service. Even this long accepted and generally used title has been altered by the French, who indicate their ownership by giving the Spanish name a Gallic flavor. The group is now charted as Iles Marquises. The Bay of the Virgins, though sometimes mentioned as Baie des Vierges in the charts, is known officially and unofficially as Hanavave.

AN EARTHLY PARADISE, SAID THE SPANIARDS

Those old Spanish chroniclers, Mendana, Figueroa, and Quieros, were enthusiastic to the verge of vehemency over this discovery. To them the islands seemed nothing short of an earthly paradise—a paradise marred somewhat, it is true, by the cannibal tendencies of the fierce, cruel warriors who swarmed by thousands in every bay and valley; but the marvelous beauty of the women and the tropical splendor of the islands evidently outweighed the ever-present possibility of becoming "long pig,"—*pua oa*—the Marquesan's somewhat startling description of the human victim intended to grace his feast.

The approach to Hanavave, which gave the Spaniards their first glimpse of the Marquesas, hardly prepared them for the wonders they were soon to witness.

From afar Fatuhiva looms a dim, mysterious mass on the horizon, bleak and forbidding; nor does a near approach soften the grim contour of the coast line. Sheer from the ocean's depths rise huge masses of towering, storm-worn basalt, seamed and riven by a thousand tempests. Here and there a gnarled and twisted ironwood has driven its tenuous roots into the scarred face of the cliff, the scanty, wind-blown foliage white with encrusted salt from high-tossed sea. Below, into the black mouths of gloomy caverns, the ceaseless waves fling their white-crested battalions with a monotonous roar, to be spumed forth again in froth and spray.

In the distance, its jagged, cloud-piercing peaks unrelieved by tree or shrub, rises the broken rim of a great crater, standing today, as it has stood through the centuries, a monument to the volcanic fires which thrust that molten mass above the hissing sea, to cool and crack into a fantastic jumble of serrated ridges, mighty precipices, and impassable gorges.

SCENES OF CAPTIVATING CONTRASTS

The amazement and delight of Mendana as his ship passed the towering black cliffs guarding the entrance to Hanavave is easily comprehended. The narrow bay was formed by the falling away of a section of the crater's wall, and through this opening, framed by gigantic, grotesque pillars and domes of black rock towering hundreds of feet skyward, one looks directly into the great bowl of the mountain whose bare, broken rim was visible from beyond the coast.

But what a contrast! Where once telluric fires burned, the luxuriant verdure of the tropics now overruns the immense amphitheater in riotous profusion. It is as if Nature in repentant mood were pouring out her gifts with unstinted hand to cover the scars and desolation wrought by volcanic fury.

Tree and vine, flower and shrub, cover the abrupt, almost vertical sides of the huge basin and clamber high over ridge after ridge of knife-like hills; choke the deep ravines and valleys with their prolific mass of bloom and foliage, and,

XUM

Photograph by L. Gauthier

A SCENE IN THE VALLEY OF HANAVAVE, ALSO KNOWN AS "BAY OF THE VIRGINS," WHERE THE SPANISH DISCOVERERS OF THE MARQUESAS ARCHIPELAGO FIRST LANDED

XUM

Photograph by L. Gauthier

A GROUP OF NATIVES POSING FOR THEIR PICTURES IN THE JUNGLE

In Marquesas' halycon days physical beauty, rather than cleanliness, was next to or even superior to godliness. The members of both sexes spent many hours each day in the hands of skilled masseurs, who anointed the body and hair with coconut oil scented with the fragrant blossoms of *pua* or the seeds of the spicy, aromatic lime.

Photograph by John W. Church

A PRETENTIOUS NATIVE HOUSE AT ATAONA: MARQUESAS ISLANDS

Each thatched hut has its *paepae*, or platform of stone, constructed without cement or mortar. The house furnishings consist solely of two or three mats, upon which the occupants sleep.

creeping in rich abundance almost to the water's edge, climb the black basalt cliffs towering over the bay, thus seeking to soften their harsh, broken outlines beneath a rank growth of vines and mosses.

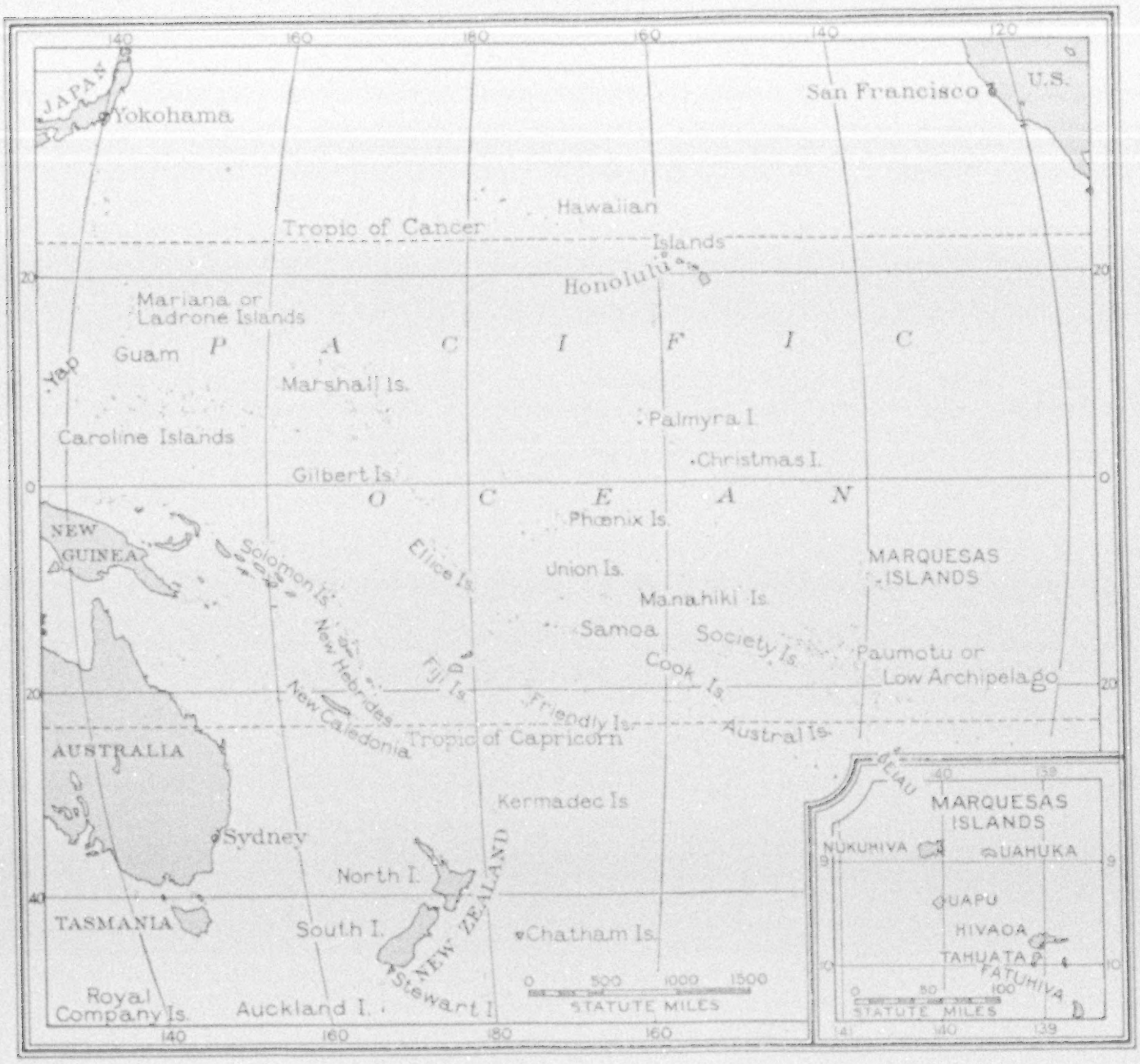
Great cascades, springing from the living rock high on the mountain side, leap over mighty precipices, gleaming like strands of silver in the sunlight, to be lost in the mysterious depths of dark gorges far below. These waters wind through dank, tortuous ravines and form the racing stream that tumbles swiftly between the twisting hills into the steep valley of Hanavave, where it rushes over its rocky bed to pass into the blue waters of the quiet bay.

THE TRADITION OF MENDANA'S SAILORS AND THE MARQUESAN HELENS

Beyond the crescent of white sand that lies between the cliffs, banyan, mango, and breadfruit trees mingle their brilliant foliage and blossoms with the slender brown trunks and waving fronds of the pandanus and coco palm.

Less than a century ago this forest was thickly dotted with the brown thatched huts of the Hanavavans, each upon its *paepae* or platform of stone constructed without mortar or cement. The abrupt slopes and twisting, broken formation forced the Marquesan to become adept in dry stone-work, and he met the difficulty with skill and intelligence. Thousands of these *paepae*, no longer in use, cling to the vertical sides of valleys and ravines in a state of perfect preservation, the platform usually 20 by 30 or 40 feet, level and unbroken, often walled up 10 or 15 feet on the lower side.

Properly to comprehend the life of the Marquesan, his customs and habits, a clear understanding of the physical conditions under which he lived prior to the white man's advent is necessary.



Drawn by R. M. Parker

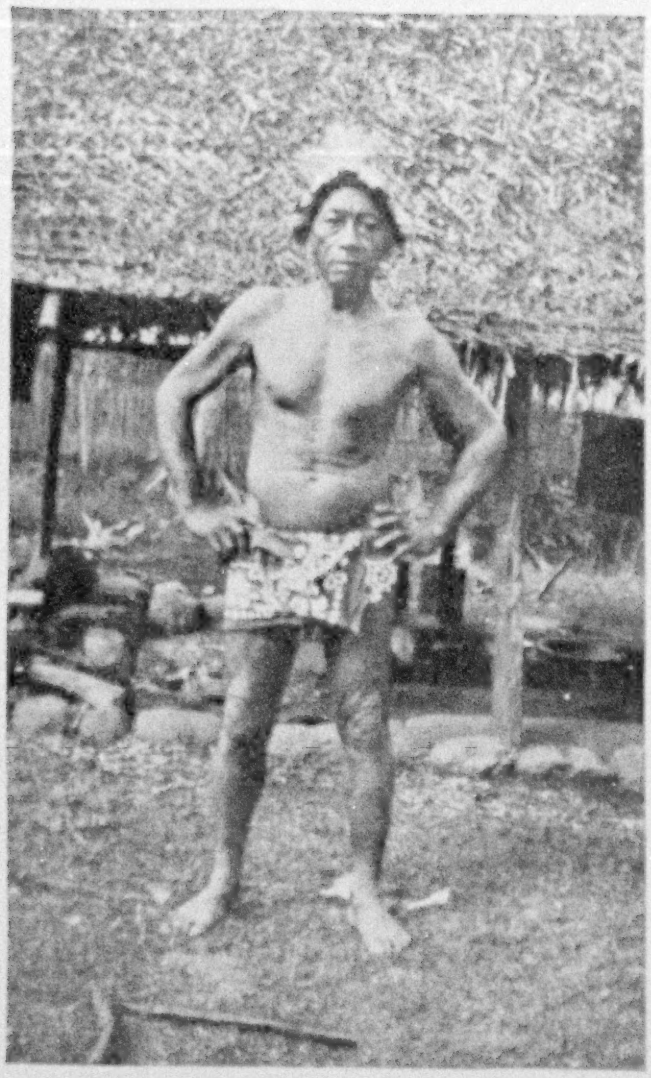
SKETCH MAP OF THE SOUTH PACIFIC ARCHIPELAGOES, INCLUDING THE MARQUESAS GROUP: NOTE THE LOCATION OF YAP AMONG THE CAROLINE ISLANDS

The brief visit of Mendana and his fleet had at best—or worst—a transitory effect upon these savages. There is an interesting tradition, still believed by the Hanavavans, that a number of Mendana's crew, enraptured by the physical pulchritude of the native women, deserted their ships, enacted a South Sea rape of the Sabines, braved the wrath of the cannibal warriors, and, taking with them a score or more of the most attractive maidens, fled over the mountain to an inland valley, where they lived happily ever after.

The story goes that from this adventure sprang a tribe of beautiful red-haired women and fierce warriors, who for generations raided the bay villages of Hanavave and Omoo when they came from their inland fastness for salt water, there being no salt deposits on the island.

Of the existence of such a village there is no proof; but in Hanavave and nowhere else in the islands I saw several women and boys with a wealth of rich auburn hair. In appearance otherwise they were full-blooded Marquesans. Of their descent, whether from the inland village or a less romantic source, they had no knowledge and evinced typical Marquesan indifference.

Aside from this single instance, if even it be true, the Spaniards left no mark on the few bays they visited. It was the ad-



Photograph by John W. Church

TAKI, A HUAHUKA CHIEF, WITH HIS HEAD-DRESS OF HUMAN HAIR, BONE, AND SHARK TEETH

He is heavily tattooed from head to feet, but the lens of the camera does not reproduce the blue figures on brown skin.

vent some two centuries later of an infinitely more energetic and business-like explorer, the famous Captain Cook, that marked the beginning of the rapid decadence and eventual extermination of the people he earnestly desired to aid. Cook rediscovered the Marquesas in 1774, while on his third voyage through the South Seas.

At that time there were eleven densely inhabited islands, with a total of some sixty bays and bay valleys, each supporting a population of from one to five thousand, and in some instances, such as Puamau, Taipi, and Hanavave, possibly nearer double that number. There were also several inland valleys with large villages.

To place the population of the group in 1774 at 150,000 would be a conservative estimate. Captain Cook gave a larger figure for the single island of Tahiti at the time of his first visit, and though for a long time his estimate was held to be absurdly high by men less familiar with the island, later investigations carefully pursued have established Cook's figures as essentially correct. The densely populated Marquesas in all probability exceeded in numbers the single island of Tahiti; but be that as it may, it is certain that had it not been for the incessant warfare between the tribes, the practice of cannibalism and other customs deterrent to a natural increase in their population, the islands would have become inadequate to the inhabitants' support many centuries ago.

THE PIG WAS THE MARQUESAN'S ONLY ANIMAL

Being of volcanic origin, the group was devoid of fauna. The pig, probably brought by the savages on the long journey from Asia, was their only animal. The dense forests and jungles were—and are—devoid of snakes, insects, etc., which usually abound in such disconcerting activity in tropical countries.

There were a few birds, mostly of seagoing species, but these did not interest the Marquesan, as he did not use them for food. The kuku, a species of parrakeet, is the only really edible bird in the islands today, and I do not know that it was in the Marquesas prior to Cook's visit.

In the bays and reefs along the coast there were many kinds of fish, from the man-eating moko, or shark, to the much smaller but more palatable bonita; and in the valleys and mountains nature had been lavish with her gifts. Some of the fruits and flowers are of a later period, dating from Cook's introduction of the orange, several varieties of mango, bananas, fei, etc., from Tahiti and other islands. But while the supply of food might and often did prove insufficient by reason of the tremendous population the islands had to sustain, the variety of flora was ample for native needs in every way.

The coconut palm served the inhabitants of the islands with a utility as varied as the cactus serves a Mexican: food,

drink—both hard and soft—oil, fiber for mats, baskets, and ropes, its fronds for thatching the huts and a score of minor services. And in whatever particulars of pliable usefulness the coco palm failed, the pandanus, with its soft, satiny leaf of great strength and durability, came to the rescue. Then, too, they possessed the *mei*, the famous breadfruit, which, fresh and "rotten," has been the staple food of the South Sea islands for centuries, and from whose bark much of the native tappa cloth was made. From the trunks of the massive, stately ti, or Marquesan mango, swift, graceful canoes were fashioned, each from a single hollowed log.

War clubs and tappa sticks were fashioned from the tou, a bastard ebony, heavy as iron and almost as unbreakable. From the mio, a rosewood, many of their bowls and paddles were made; also from the kokoo, one of the few trees which brave the tempest-swept coast between the bays.

From the pua the maidens gathered the white, gardenia-like blossoms with which to scent the coco oil; and the nuts of the ama, strung on oil-soaked fiber, gave the Marquesan his dim and fitful light o' nights.

Though rarely used by the savages, Nature supplied them with two poisons. The hutu, a magnificent tree, with gorgeous crimson tasseled flowers, produces a fruit resembling a large mango in appearance, which is a strong narcotic. This they sometimes used to stupefy fish by crushing the fruit and throwing it into the bay. From the root of the eva they could extract a deadly poison.

There grew also the beautiful hibiscus, the bamboo, the noni, the ena, a pungent native ginger, and many wonderful tropic flowers with which I am familiar only by sight and their native name and not enough of a botanist to classify.

DISEASE UNKNOWN WHEN THE ISLANDS WERE DISCOVERED

Several varieties of bananas, mammee apples, and yams belong to this period, but I believe the uma, or native sweet potato, was of later introduction.

The above incomplete list indicates how bountifully Nature provided for the needs of the Marquesan, save only in that his capacity for propagation at times outstripped her unaided ability to supply his demands.

Photograph by John W. Church

VAEHEHU, QUEEN OF NUKUHIVA, PRINCIPAL ISLAND OF THE MARQUESAS GROUP

She lives in state on the shores of the Bay of Pusa, with a number of men who work her copra, but are not royal consorts. The wrapper was donned for the photographer. This is the queen's bay, and no one can live there except her men and herself.

The omission from this list of any herbs, roots, or barks for medicinal purposes brings out a striking feature in the life of these savages, the more so as it is contrasted with their pitiable condition today. At the time of their discovery disease was unknown in the islands, so naturally no provision was made against it. Lacking poisonous reptiles, dangerous beasts, or insects to carry infection from some far-away land, the Marquesan lived in a state of physical health rarely found among other races.

While in all essentials the flora as well

Photograph by John W. Church

PREPARING FOR MARKET THE ONLY ARTICLE WHICH THE MARQUESAS GROUP SENDS TO THE OUTSIDE WORLD

The coconut palm not only furnishes the native with copra, his medium of exchange, but provides him with food, with drink, with the roof for his house, and the fiber for his mats, baskets, and ropes.

as the customs and habits of the savages in the islands were identical, in specific instances there was much variation. Trees grew in some valleys which were unknown in others; the whim or judgment of the tribal king instituted customs and proclaimed *tapus* unlike those in vogue among their neighbors; and even the language varied greatly throughout the group. Although the islands lie but 5 to 50 miles apart, ceaseless warfare prevented any affiliation among them, and it is the great similarity rather than the slight divergence in their mode of life that is worthy of comment.

It was with good cause that without exception the numerous discoverers of the group waxed eloquent over the Marquesan. He was a magnificent savage. Averaging six feet in height, with a muscular development any athlete might well envy, good features, and the clear skin and eye of perfect health, it is small wonder he aroused their admiration.

THE BEAUTIFUL MARQUESANNES

To describe the dainty, graceful Marquesanne as she unquestionably was will, I fear, lay me open to the charge of exaggeration. If so, I shall still be in good company. From Mendana to Stevenson, with Melville for good measure, her remarkable beauty was a source of surprise and admiration. Unfortunately, my personal observation has been restricted to a period fraught with sickness, misery, and mixed blood, but today the few young women in the islands bear out the claim made for the beauty of their maternal ancestors.

When women possess beautiful, luxuriant hair, fine eyes, perfect teeth, a slender, graceful form, a skin of velvet texture and unblemished surface, and these physical attractions are combined with a vivacity of spirit and action, exaggeration becomes difficult; and unless all chroniclers of the islands have for several centuries agreed to deceive the world, such was the Marquesanne; and so she is today when sickness has not diminished her charm.

FIERCE, CRUEL CANNIBALS

The men were fierce, cruel cannibals, whose chief occupation, aside from the indulgence of their amative proclivities, was the killing of both men and women of other tribes for gastronomic purposes.

The sentiment often encountered in other cannibals regarding their victims, such as devouring a brave enemy in the belief that the mantle of his courage will envelop the victor, or the interesting idea that it is better to eat your friend than to have him rot on the ground, would have found scant favor here. To paraphrase a popular author, "pig was pig," and the longer the better, to the Marquesan.

Each tribe had its *tiki*, or god, to whom its members tendered a somewhat casual worship. High up in the valley, usually in the gloomy shadow of a great precipice over which the sun rarely shone, they built their *Maie*, or sacred sacrificial grove.

Here, beneath the deep shade of the sacred banyan trees, was erected a series of terraces and platforms, the highest some 15 feet from the level of the stone-paved grove. This great *paepae*, often 100 feet in length, was large enough to seat comfortably — on their heels — the tribal king, his chiefs, and several hundred warriors.

In the center stood the *tiki*, a crude, grotesque image, sometimes of wood, but more often rudely carved from soft stone with tools of flint. A large stone oven stood at one end of the *paepae*, and here the priest, with his assistants, attended to the preparation of the feast. After the *piece de resistance* had been properly baked, certain ceremonies of a nature presumed to be gratifying to the *tiki* were performed. A leaf-lined bowl containing human eyes and other tidbits to tickle the royal palate were presented to the king, and the feast was on.

In the sacred grove were gathered the lesser ranks of fighting men and youths, who had not yet attained their spears. No women were present. For a woman to step inside the stone wall marking the limits of the *Maie* at any time was *tapu*, or taboo, and merited instant death. Nowhere, to my knowledge, in the South Seas—certainly not in the Marquesas—was the taboo against eating "long pig" ever lifted for the gentler sex; and it is safe to say that in the centuries past, mil-

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Photograph by John W. Church

MARQUESAN NATIVES PREPARING THEIR FAMOUS DISH, "POIPOI"

This food, made of fermented breadfruit, is not to be confused with Hawaii's palatable *poi*. The Marquesan "staff of life" has an acrid taste. Together with raw fish, it forms the principal diet of the natives.

lions of women have lived and died in these islands in intimate touch with cannibalism, none of whom has ever tasted human flesh.

The all-powerful *tapu* was the "law and the prophets" of the Marquesan. His religion has perplexed every investigator who has attempted to understand it, possibly because there is so little to understand. The *tiki* had its priest, who ranked next to the king in power and was often consulted by him. How far, if at all, the will of the god, as interpreted by the priest, might limit the power of the king has never been solved. But the king's will was held sacred to a degree unbelievable in savages whose bump of veneration was almost a depression.

Certainly the knowledge that the breaking of the simplest *tapu* meant death acted somewhat as a deterrent, but all evidence and tradition points to the fact that a desire to obey the tribal law rather than fear of the punishment to follow its infraction was the mental attitude of the Marquesan.

Several well-established *tapus* existed in common throughout the group, although any of these could be lifted by the king of any valley for the public weal or private royal pleasure.

THINGS WOMEN WERE FORBIDDEN TO DO

Some of the *tapus* for the guidance of the women would, I suspect, incite a suffragette to spectacular wrath.

Without exception on any island, women might not eat "long pig";

Nor brown pig, a delicacy much enjoyed by the men folks in the absence of the longer variety;

Nor dally with bonita or squid, the two fishes most in favor with the Marquesan palate;

Nor, except on special occasions, eat fresh breadfruit, bananas, or coconut;

Nor could they go in canoes, a provi-

Photograph by John W. Church

SAILORS OF A TRADING SCHOONER WEIGHING COPRA

The trader makes 1,000 per cent or more on the goods given in exchange for this dried coconut meat.

sion to keep them from being captured by enemies lurking outside the bay.

And a *tapu* savoring of Solomon in its wisdom, women could not weep!

The food prohibitions, with the exception of the ones relating to long and brown pig, were subject to change during periods of plenty. It is obvious that the intention was to reserve for the warriors the best of the season's delicacies in times when food conservation became necessary.

DROUGHTS MADE ROTTEN BREADFRUIT A NATIONAL DISH

And while there were no profiteers nor cornerings of the market in the Marquesas, it often happened that famine did threaten on one or all of the islands. Although their geographical situation indicates well-defined wet and dry seasons, and the encyclopedias kindly give them a "hot and moist" climate, the group is subject to prolonged droughts, in one recorded instance scarcely any rain having fallen in nearly three years. Just prior to my arrival one spring it rained for the first time in thirteen months.

These long droughts were responsible for a practice which eventually established rotten breadfruit as the national food of the Marquesas. When boiled or baked fresh, it is a very pleasant food, somewhat like a well-baked, mealy potato, but with more flavor; and it has always been the staple food of the islands. But while there were many trees, and they bore prolifically for three or four months during the year, there ensued a period of eight months between the ripening of the fruit and the next crop, and in times of extreme drought the trees often failed to bear at all.

From this sprang the rule against fresh breadfruit for women at certain times and the custom of gathering the fruit when green and burying it by the thousands and tens of thousands in huge

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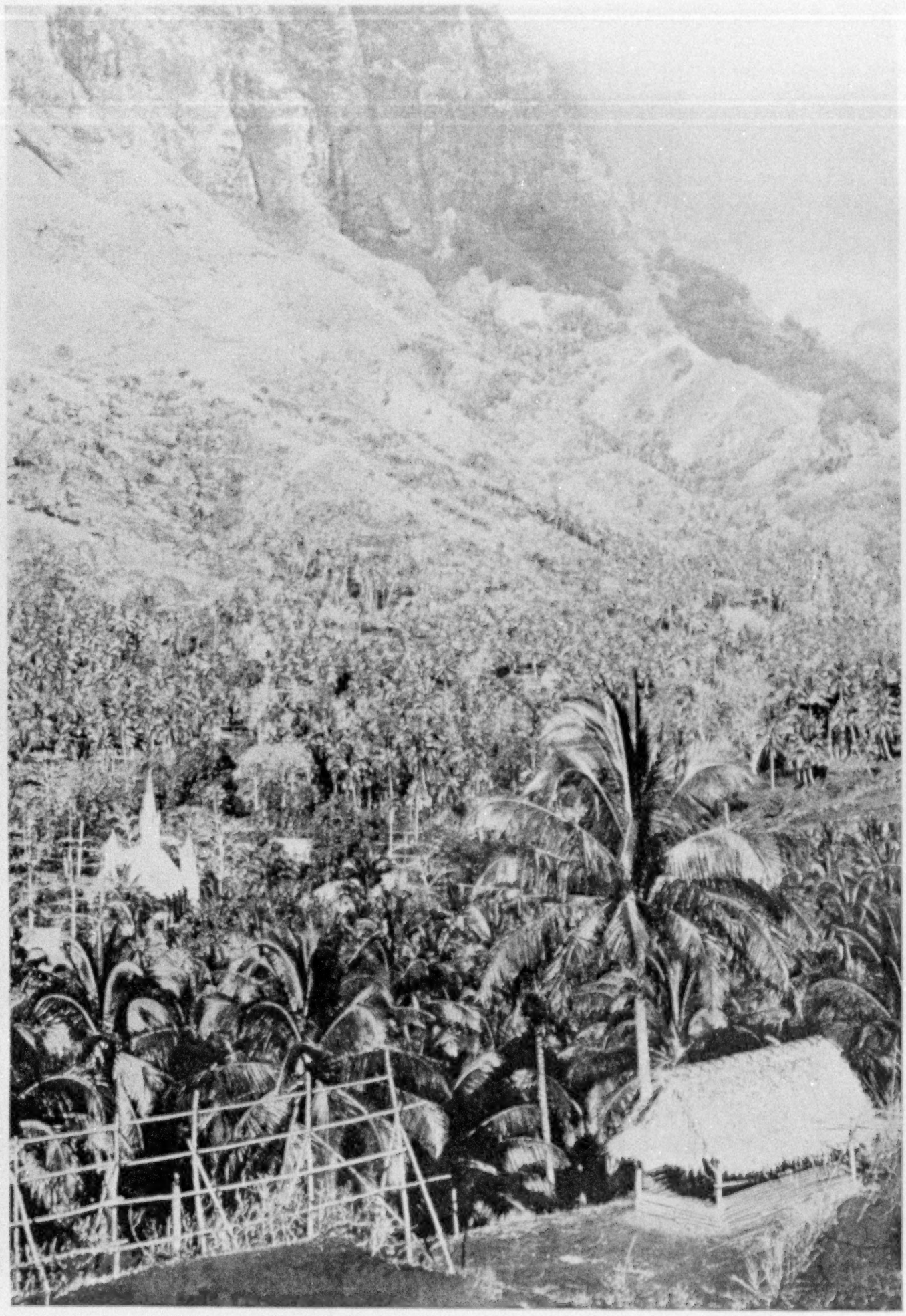

Photograph by L. Gauthier

THIS VIEW GIVES A FAIR CONCEPTION OF THE RUGGED BEAUTY OF THE SCENERY IN THE MARQUESAS

The church at the left is the old Catholic cathedral at Ataona. The village is lost in the tropical forest, which grows at the base of mountains rising nearly 5,000 feet above sea-level.

pits dug in the ground for this purpose. After the pit was filled it would be covered with a layer of earth and a stone wall, too high to be jumped by the wild pigs, built around it.

Every valley had several of these pits, guarded by *tapu* until the food supply ran short. Sometimes five years would elapse before necessity forced the king to lift the ban and open a given pit.

By experience, it was discovered that even ten years did not destroy the buried breadfruit. The once green outer rind turned black, and the contents presented a white, somewhat mushy appearance, fermentation beginning immediately after it was broken open. This, when ground in a wooden bowl with a stone pestle, would rise like a mass of fermenting dough and had the same sticky consistency. It had an unpleasant odor and possessed an acrid, bitter flavor decidedly unwelcome to the uninitiated palate.

This is the famous *poipoi* of the Marquesas, not to be confounded for a moment with the delightful *poi* of Hawaii, Tahiti, and other South Sea islands. The latter more nearly resembles the Marquesan *kochi*, a similar preparation of fresh breadfruit over which a cream squeezed from grated fresh coconut is poured. Centuries of eating the fermented breadfruit finally destroyed the Marquesan taste for the fresh fruit, and his principal food, together with his favorite varieties of pig, became the acrid *poipoi* and raw fish dipped in a bowl of salt water.

THE CARE-FREE LIFE OF THE MARQUESAN GIRL

It would be a grave error to conclude from the taboos mentioned that the life of the Marquesan woman was a hard one. I doubt seriously if a more carefree or contented maiden ever existed. Her domestic duties were light and agreeable. The furnishings of her thatched shelter consisted of a few pandanus sleeping mats—nothing more. Outside on the stone platform was an assortment of bowls, crudely carved by the men in their intervals from warfare. These held *poipoi*, fish, fruit, or whatever of food might be prepared for the one daily meal, at which the savages gorged to repletion.

Then there were dainty coconut shells, ground thin and polished by rubbing on stone under water, often carved, which held the coco oil and other preparations for the toilet, dear to the heart of the Marquesanne.

A community fire was usually kept smouldering in a fallen tree, where it would burn for weeks. Otherwise youths who were adept in fire-making from wood by friction would quickly furnish the housekeeper with a blaze in the small stone oven at one end of the terrace.

The making of tappa cloth was her only tedious occupation, and, as the girls always gathered in groups and discussed matters of interest to the feminine mind while they worked, I doubt if it proved more onerous than the modern sewing circle.

WOODEN HAMMERS WERE THE LOOMS FOR TAPPA CLOTH

The tappa was made from the bark of several trees, the breadfruit tree making the best quality. The manufacture of the fabric was simple. A sapling or branch two or three inches in diameter was used. The bark was slit with a sharp stone and peeled off, then cut in two lengthwise, each piece about 12 inches long. This strip of bark was then laid on a flat stone and gently but firmly beaten with a tappa stick, a short club with corrugated sides, until its fibers spread to an incredible length and width. While in this almost pulpy state, the next piece beaten out would be tapped into the edge of the first, and so on until sheets sometimes 30 and 40 feet square were made and joined without a seam. The cloth was then laid in the sun to bleach, its deep rich brown turning a creamy white in the process, after which it was sometimes dyed with vegetable stains.

The resulting fabric was a very thin but surprisingly durable one, to be used for loin cloths and girdles—when any were worn—for covering on chilly nights, and other household purposes. Its name, as will readily be perceived, is derived from the tapping sound made on the stone by the wooden pounder.

I have mentioned the use of coco oil by the Marquesans. Probably no race ever attained a greater skill in the art of mas-

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Photograph by John W. Church

COPRA IS MADE BY SPLITTING THE COCONUT IN TWO AND SUN-DRYING IT ON THE GROUND OR ON ROCKS

sage—certainly none ever practiced it more constantly. The oil was obtained by filling large wooden bowls with the meat of broken coconuts and placing them in the sun. Into the oil thus drawn the intensely fragrant blossoms of pua or the seeds of the spicy, aromatic lime were thrown, scenting it with a delightful perfume.

MARQUESANNES WERE ADEPT IN THE ART OF MASSAGE

Men and women alike were daily massaged with this scented oil, every muscle being gently manipulated with a skill seldom found in a modern masseuse. Usually two or three hours were required for the operation. At its conclusion the skin was like velvet in texture, without a trace of oiliness. They treated their hair in a similar manner, and the wonderful, luxuriant tresses were probably due to the attention given them in the use of coco oil and massage.

To it also, I am sure, must be given credit for the clear skins and powerful muscular development of the warriors. Even today, disease-ridden as they are, it would be difficult to find finer specimens of apparent physical strength than one sees in the Marquesas.

BABIES SWAM BEFORE THEY COULD WALK

Beyond the preparation of the single daily meal, her massage, and such tappa or mat making as desire or necessity prompted, the life of the Marquesanne was devoted entirely to pleasure. The quiet bays and tumbling streams made ideal bathing places, and warrior and maiden alike were almost amphibious. Even the babies were taught to swim before they could walk alone.

Like all Polynesians, they were passionately fond of flowers, and many of their hours were spent in deftly weaving blossoms, leaves, and ferns into wreaths and necklaces to be worn during the day by their men and themselves. Strangely enough, among such a pleasure-loving

Photograph by John W. Church

ONE OF THE MAIES, OR SACRED GROVES, OF THE MARQUESAS

Back in the deep shade of the banyans is another terrace, on which the native *tiki*, or god, stood. Here the feasts which followed human sacrifices were held.

race there were no songs nor dances, if one excepts the remarkable hula-hula, which was essentially an amatory, terpsichorean debauch, usually the concluding ceremony of any fête or feast.

WHERE TATTOOING HAD BECOME A FINE ART

Both men and women were elaborately tattooed. Had I not unfortunately lost the color screen of my camera, I would be able to show photographically some of the really beautiful work done with the bone needle. The ordinary lens of the camera will not reproduce the blue figures on brown skin, so I am without photographic confirmation of their skill in an art for which they have been famous throughout the South Seas.

Usually there was but one tattoo artist for each tribe, and his apprentices lived with him. They used a set of needles made from human bone and the juice from the buds of the noni bush for color. Under his skillful hands, each maiden and youth of the tribe willingly underwent the torture of tattoo.

The amount of decoration varied according to rank, additions to the original designs often being made later in life; but always the legs were tattooed from ankle to thigh, and necklaces and bracelets were worn on the arms and throats of the maidens. The warriors were covered with geometric and spiral designs, except the face, which was divided into blocks of solid color like a chess-board. The squares on the faces of the chiefs were sometimes enclosed in an inverted triangle, the base running across the forehead and the point resting on the chin. This peculiar marking gave to the naturally mild countenance of the warrior an expression of extreme fierceness.

Much of the ornamentation of the women resembled fine lace-work, and, as their skins were usually a light brown,

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Photograph by John W. Church

A MARQUESAN HOME ON THE ISLAND OF TAHUARA

The sides of the hut are made of breadfruit saplings and split bamboo, the roof a thatch of coconut-palm fronds. The forefathers of these sickly, somber-faced natives were fierce, cruel cannibals, whose chief occupation, aside from the indulgence of their amative proclivities, was the killing of both men and women of other tribes. The bodies of their enemies were served at feasts in the sacred groves of the islands.

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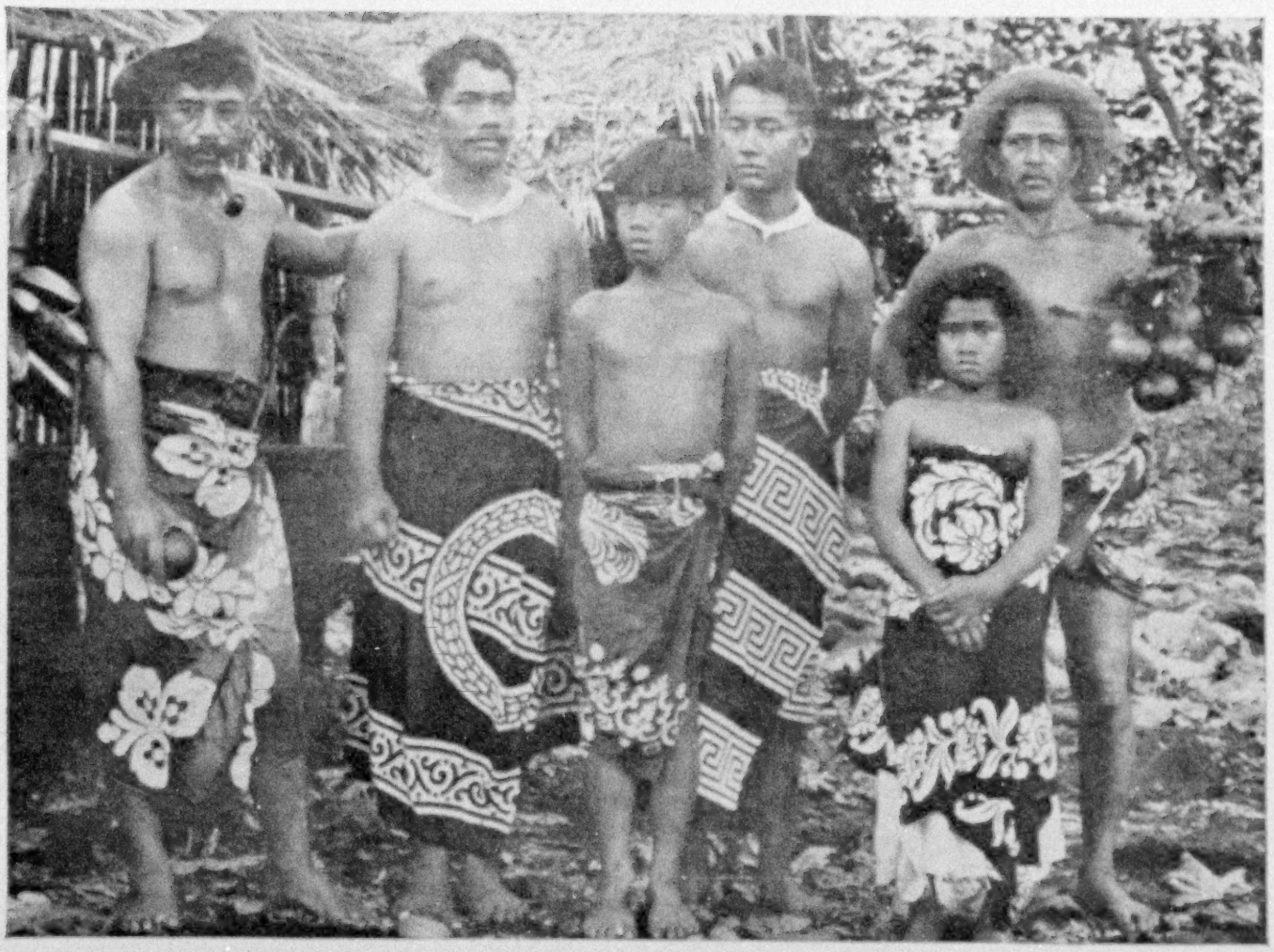
Photograph by L. Gauthier

A SCENE POSED BY MARQUESAN NATIVES SHOWING THE KILLING OF A VICTIM TO BE USED FOR SACRIFICE AND "LONG PIG"

The unsuspecting savage is stunned by a blow from behind, and then carried to the sacred stone, where the operation is finished. When tribal warfare failed to yield a sufficient quantity of human flesh, the native priest selected members of his own tribe to grace a feast.



Photograph by John W. Church

A GROUP OF MARQUESANS RESPLENDENT IN THEIR NEW COSTUMES WHICH THEY HAVE JUST BOUGHT FROM THE SKIPPER OF A TRADING SCHOONER

Before the white man brought these machine-woven fabrics to the islands, the Marquesans wore aprons and skirts of tappa cloth, hammered from the bark of the breadfruit tree.

some of them about the shade of old ivory, the delicate tracery of the tattoo stood in clear relief.

TATTOO DESIGNS FOR WOMEN RESEMBLED FINE LACE

To one unaccustomed to the human form beautifully tattooed instead of clumsily concealed beneath the garments of civilization, it will possibly be difficult to convey its attractiveness; but to the many travelers who have become familiar with the sight of the South Sea natives, with their lithe, graceful bodies and marvelously tattooed skins, the unrelieved pallor of the white races seems sickly and uninteresting.

The period required for tattooing was from two to three weeks, during which time the tattooee was *tapu*—lived in solitary agony in one of the huts provided for the purpose, and awaited with stoical patience the subsidence of the inflammation and fever incidental to the operation of decoration.

It has been said that the tattoo was an institution in some way connected with the tribal worship; and for this reason the French prohibited it at the request of church dignitaries. This may possibly be true, but the Marquesan religion was at best but a casual affair.

THE MARQUESAN A LORD OF EASE

Although the Marquesan was averse to work of any kind, he could be industrious on occasion, as evidenced by the magnitude of his stone-work in the sacred groves, the hundreds of terraces in every valley, and the scores of canoes owned by each tribe.

In the fashioning and decorating of his war clubs, spears, and paddles he found leisurely employment for idle hours, and here his labor ceased. Even the trails through the villages would test the ability

of a mountain goat—or a Marquesan—but they were rarely improved. If a ravine was narrow enough for a fallen tree to span and the tree at hand, it was dropped across the ravine. Otherwise there would be no bridge.

Agriculture in any form was unknown. The natives took the bountiful variety of flora the islands provided, but to assist nature in any way by tilling or replanting never occurred to them. Content with their gratification of the desires of the day, the Marquesans took literally no thought for the morrow.

The ownership of land was a sort of community affair prior to the coming of the white man, and probably, like all things else, subject to the tribal regulation. Thievery or crime of any sort was unknown. Implicit obedience of the *tapu* was the only law. Within its pale their lives were regulated by customs evolved from their own desires, obviating any occasion for the envy, discontent, or ambition from which crime arises.

THE CURIOUS MARRIAGE CUSTOM

In the Marquesan language there were no words to express our conception of either love or jealousy, nor had these emotions any place in their lives. Their domestic relations have always been a very loosely defined system of polyandry. Each woman or girl—they bore children at the age of twelve—usually had two or more accepted "husbands," but there was an amiable custom of a temporary exchange of wives at any time without previous notice.

The marriage of the Marquesan maiden to the youth of her choice, however, was an interesting ceremony. A home for their occupation was built by their friends, and the various necessities for connubial happiness placed therein.

The maiden was taken in charge by several young matrons, to be massaged with perfumed oils and her hair and body decorated with wreaths and garlands of flowers. The youth was consigned to the ministrations of two older women, who rendered him a similar service, besides smoking him thoroughly with the fumes of sandalwood. At the appointed time the scented and garlanded pair were escorted by the village to their *fae*, or hut, where the king with much ceremony declared them *tapu* for two weeks.

For the period of the *tapu* none might speak to them or in any way disturb their honeymoon. Food was left each morning on their terrace, together with baskets of flowers to be woven into wreaths and garlands by the happy couple.

NO QUARRELS AND NO JEALOUSIES IN MARQUESAN HOMES

This was the single touch of romance in the life of the Marquesanne. Soon another husband, usually an older man, would take up his residence with the young people, in accordance with the tribal custom. Quarrels and strife among families thus constituted were unknown, and, to revert again to the present, where the same custom still exists, there are no records of any bickerings or killings over their women by the present-day Marquesans. Spiritual love, or even the desire for the exclusive possession of any woman, seems to have had no place in the philosophy of the Marquesan, nor was there any evidence of such a desire on the part of the woman.

As at all times the men far outnumbered the women, it is probable there existed a custom of killing a certain proportion of female infants in order to keep the population within bounds, as was done in Tahiti for many years.

Among a people who looked upon human flesh as the last word in gastronomic pleasure, it would seem reasonable that they should have employed any overproduction of women for their sacrifices and feasts; but, although they had no scruples about eating women and children of other tribes, their own were rigidly *tapu*.

THE LOT OF THE MARQUESAN CHILD

The attitude of the Marquesan toward children was one of impersonal but affectionate indulgence. Their loose polyandrous system precluded any certainty as to the father, and, in place of individual paternal affection, the savages looked upon all children as their own. The fact that a youngster happened to be born in the hut of Tehia, down by the bay, meant nothing in his young life. At the age of three he would probably have spent months at a time in huts up the

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THE DAYS OF THEIR TRIBE ARE NUMBERED

Marquesan girls with love flowers, or flowers of friendship, behind the ears.

valley, while Tehia would be mothering one or more belonging to some one else.

Children were welcome everywhere. There were few, if any, "don'ts" for them in home or village, and the valley provided an ideal playground for their active bodies.

This genial attitude was not confined to the children. Though fierce and unrelenting in warfare with other tribes, in their own villages the Marquesans were a mild and easy-going lot. Lacking the ambitions and desires which constitute such a large part of the mental make-up of civilized man, and free from any commercial or competitive strife, they simply failed to develop many unpleasant traits common to civilization, and remained to a great degree good-natured, impulsive children in their temper and conduct.

The peculiar contrast of their utter disregard for human life and lively sympathy for the living was clearly shown when victims were to be chosen from their own tribe. In times of stress, when unsuccessful in capturing enemies to satisfy the demands of their god or their own craving for human flesh, the king would decree the sacrifice of a number of his own men. The priest thereupon retired to his hut in the sacred grove, and after several days of fasting and prayer announced secretly to the king the names of the victims. These would be told to a like number of warriors, each of whom always awaited an opportunity to kill his man with a blow from behind, so that he died without knowing his selection as a principal in the ceremony.

AN EXPURGATED ACCOUNT OF THE MARQUESAN DANCE

No story of the early customs of the Marquesas would be complete without a brief — and expurgated — description of their one dance, the famous South Sea hula-hula. From Hawaii to Asia this remarkable exhibition of muscular and voluptuous endurance varies only in degree, and among them all the Marquesan was admittedly the past master of the art.

The hula usually took place at the mouth of the valley, where the level ground near the beach gave an opportunity for a greater number of partici-

pants, several hundred savages often taking part in the celebration. Their musical instruments were hollowed logs over which shark or pigskin had been tightly stretched. These were beaten by the musicians with the palms of their hands, filling the air with a pandemonium of sound. Bowls of *ava-ava* and *namu-chi*, the two favorite intoxicants of the savages, were scattered about to refresh the flagging spirits and muscles of the dancers.

To try to visualize the contortions of the hula for one who has not witnessed it is to attempt the impossible. Trained to its art from early childhood, with perfect development and control of every leg and abdominal muscle, they dance for hours in a frenzy of passion, uttering hysterical cries and groans, and twisting their supple bodies in lascivious, obscene movements to the wild tom-tom of the pounding drums and the shrill, never-ceasing chant of the musicians.

Utterly exhausted, men and women will fall, gasping and inert, only to creep back again, stimulated by *ava-ava* and their reviving passion, and fling themselves once more into the throes of the dance. What their powers of endurance were in the old days I cannot say, though I have been told the hula often lasted twelve or fifteen hours. I saw one a few months ago on a beach at Uapu which began at 11 o'clock and lasted until dawn, six hours later.

MARQUESAN MAIDENS ARE THE ISLAND "DISTILLERS"

Two intoxicants more dissimilar than the ones most enjoyed by the Marquesan it would be difficult to imagine. Both are in high favor in other South Sea islands, but a description here may not be amiss.

The *ava-ava*, or *ava-ti*, so called in some valleys after the root from which it is made, is concocted by a method that would scarcely win approval from a student of hygiene. A sufficient quantity of the roots is given to several maidens of the village, who sit grouped about a large bowl. Each root is chewed by them until its fibers are broken up, when it is thrown into the bowl. This operation finished, water is poured over the pulpy mass, and fermentation, greatly stimulated by the saliva of the girls, begins at once. In a short time the *ava-ava* is ready for consumption. It has a distinctly soapy taste, unpleasant to the Anglo-Saxon palate, and is one beverage my patient and long-suffering stomach refused to entertain even momentarily.

No such objection can be offered to *namu-chi*, or, as it is more commonly known, *koko*. *Ehi* is Marquesan for coconut, and it is from the coco palm that this most insidious and delectable of all drinks is made. A tall coco palm that has been windblown so that its plumy top leans far out of the perpendicular is chosen. The buds, from which eventually fifty or sixty nuts would be produced, grow in a compact, oblong cluster near the top of the palm. The native climbs, or rather runs like a monkey on hands and feet, up the slender, swaying trunk, and, using long strips of bark or fiber, binds the cluster of blossoms tightly round and round, until the result resembles a huge, fat cigar protruding from the fronds. Underneath the point of this a bowl is suspended and the tip end of the wrapping sliced off.

For a day or two the native must possess his soul in patience and climb his tree several times to chip off the gummy coagulation which forms on the end of the imprisoned cluster. After the second day it begins to drip freely, but the end must be sliced fresh every twenty-four hours to stimulate the flow. In this manner a tree will furnish one or more gallons a day for several weeks.

When fresh from the tree the beverage resembles a delicious lemonade, with a flavor which would make the fortune of a soft-drink manufacturer who could reproduce it. Fermentation takes place speedily, however, and in a few hours your soft drink has "hardened" into a vicious man-killer that only a savage can go against with impunity. I speak from experience.

THE ADVENT OF THE WHITE MAN'S VICES AND VIRTUES

In the foregoing pages I have tried to depict the Marquesan as he was before the long arm of civilization laid a finger on his island home. His vices and his virtues were his own. No extraneous in-

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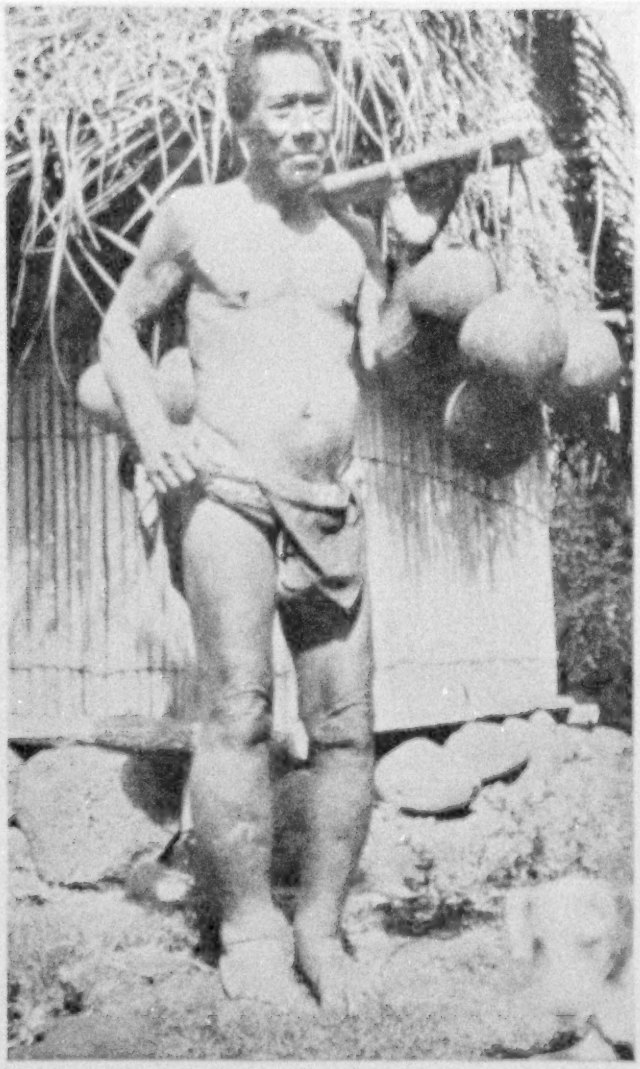


AN OLD MARQUESAN BRINGING HOME A LOAD OF FRESH BREADFRUIT

His legs are enlarged from a disease known as *fefe*, a form of elephantiasis. The Marquesan has fallen upon evil days, fraught with sickness, misery, and mixed blood.

fluence could be praised or censored for either. Granting that he was a cruel, licentious cannibal, it must also be conceded that he approached the ideal combination of health, wealth, and happiness to a degree rarely, if ever, attained by any civilized community.

I have said that the coming of Captain Cook, in 1774, presaged disaster for the Marquesans. As a result of his previous voyages, Cook was more or less familiar with the life and habits of the Polynesians, and found no difficulty in winning the confidence of the savages in this remote group.

They welcomed the white men to their shores, and in return Cook brought them fruits and vegetables from other lands to add to their store of food. He introduced cattle, sheep, and goats on the islands, and made the warriors invaluable presents of iron and steel tools and knives. So far the famous English voyager is on the credit side of the ledger. But unfortunately there is a debit page as well.

A LAND OF NEGLECTED RESOURCES

Welcomed literally with open arms by the women and girls, the crew of his vessel left behind them a trail of disease hitherto unknown. Today great herds of cattle, sheep, and goats roam unmolested over the islands, while the Marquesan, when he eats meat at all, contents himself with the same pig which he held in high esteem long before the white man came; year after year the fruit Cook introduced rots on the ground, but the evil results of his visit have multiplied a thousandfold.

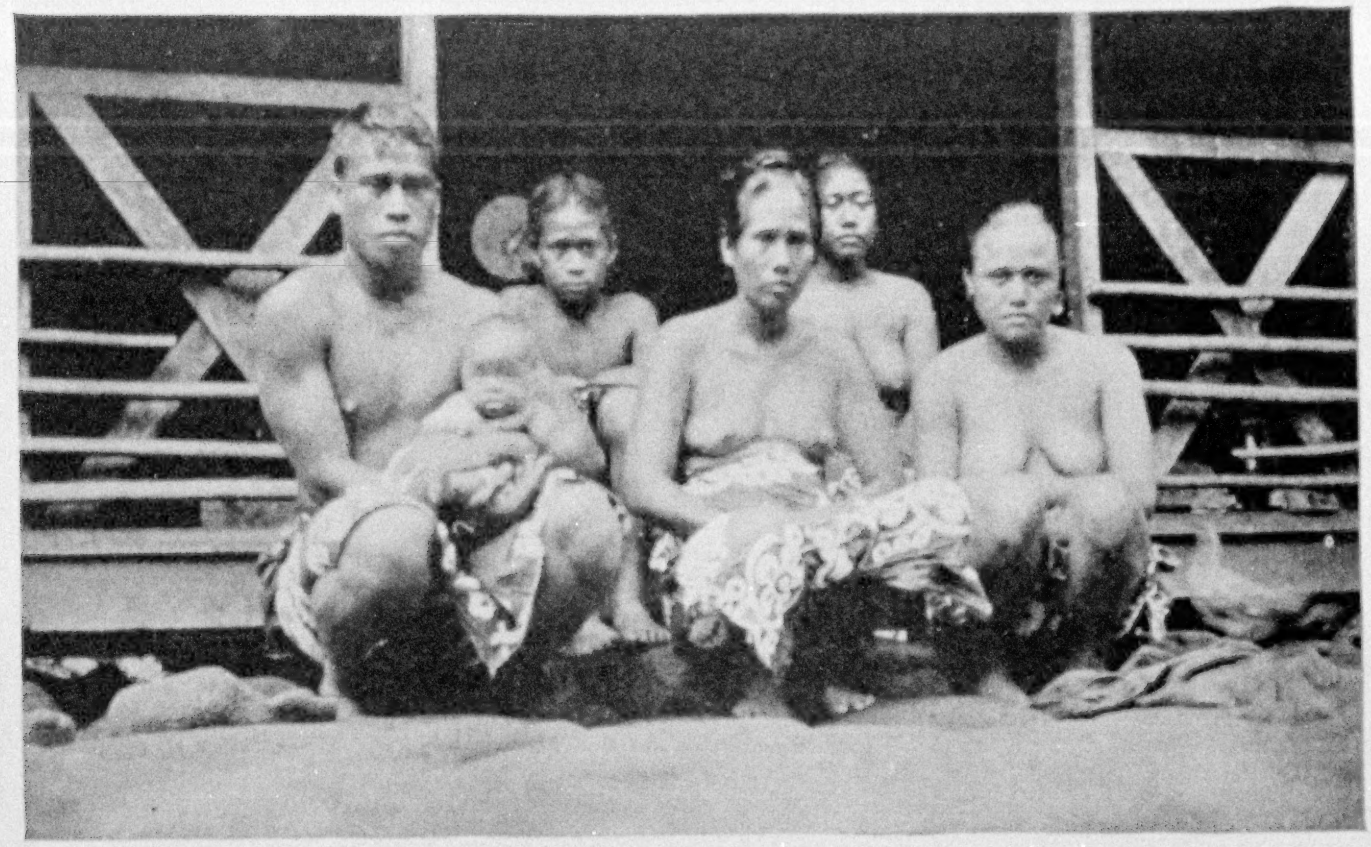
His report placed the Marquesas literally and figuratively "on the map." That was 145 years ago, and since then the history of the islands is the tragic story of a losing fight by a race of savages against a civilization represented in this instance by the whaler, the missionary, the trader, the "blackbirder," and finally their conquest and subjugation by a foreign power.

Let me say here, lest some of my missionary friends take exception to the company in which they are placed, that the arrangement is purely chronological. Several sporadic attempts were made from 1812 to 1860 to christianize the islands, but with the exception of the heroic Kikela, a native Hawaiian who came as a missionary to Hivaoa, these were, in the main, short-lived.

THE ARRIVAL OF THE FRENCH

In 1842 Admiral Du Petit-Thouars took possession of the entire group in the name of France, ostensibly to protect the missionaries in their labors for Christianity. Forts were built on several of the islands and troops installed to enforce French authority.

The ensuing fifty years is a record of desultory warfare between the French soldiers and the Marquesan warriors, in which the latter, always at war with each other and poorly armed, were constantly defeated; of "blackbirders" from North



Photograph by John W. Church

THE THREE WOMEN SHOWN IN THIS PHOTOGRAPH ARE THE ONLY ONES IN A VILLAGE OF THIRTY MEN AND BOYS

The decrease in population throughout the islands is at least eight deaths to every birth. It is predicted that in another decade not one full-blooded Marquesan will be alive—a pathetic commentary upon the cost that the savage has paid for a civilization which he has never been able to assimilate. The South Sea Islander has learned to practice few of the white man's virtues, but has been an apt pupil in adopting many of his vices.

and South America who raided the weakened villages and sold the men and women into slavery in far-off lands, and of the frightful ravages of smallpox, tuberculosis, leprosy, and other contagions among a people who had never known disease.

THE TERRIBLE VISITATION OF A SMALLPOX EPIDEMIC

One instance, terrible in its consequences, may be cited as an example. About 1861 a Chilean blackbirder, who had raided several of the bays on Nukuhiva and Uapu, was captured off the Peruvian coast by a French warship and the Marquesans recovered. While bringing them back, smallpox broke out on board. The savages, ill with the disease, were put ashore in a bay on Nukuhiva. Some of them were from Uapu, and these took canoes and paddled 30 miles across the ocean to their home. In less than three months some 5,000 of the natives on Uapu had died of smallpox, almost depopulating the island. Nukuhiva also suffered greatly before the unchecked epidemic ran its course.

In their sincere but often misguided attempts to convert them, the missionaries added greatly to the misfortunes of the Marquesans. They successfully appealed to the French to assist by force in destroying all customs of the natives not in harmony with the Christian religion as they interpreted it.

Native gods were overthrown; tattooing, the hula-hula, and the making of *ava-ava* and *koko* were prohibited; and of course any further indulgence in "long pig" was strictly forbidden. Persistent efforts were made to regulate their domestic life, but these naturally met with unqualified failure.

Though dazed by the swift destruction of his economy of existence by the white men, the Marquesan doggedly refused to submit to their authority. The French

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Photograph by John W. Church

A SCENE TYPICAL OF THE NATURAL BEAUTY OF THE MARQUESAS: THE TREES IN THE FOREGROUND ARE COCO PALMS

The islands are of volcanic origin, and present, in curious contrast, jagged, cloud-piercing peaks and mighty precipices embracing valleys of marvelous tropical verdure. Ravines fairly choking with prolific masses of bloom and foliage abound.

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Photograph by L. Gauthier

THE FAES, OR HUTS, OF THE MARQUESANS ARE BUILT UPON STONE PLATFORMS KNOWN AS PAEPAES

Three centuries ago the Marquesas Islands teemed with a healthy, happy people. Today there are thousands of *paepaes*, no longer in use, which cling to the sides of valleys and ravines in a perfect state of preservation. The platform is usually from 30 to 40 feet in length and 20 feet broad, level and unbroken, and often walled up to a height of 10 or 15 feet on one side, according to the slope of the site.

could proclaim their prohibitions, and with their troops enforce a certain outward obedience in a few villages, but the natives as a whole have clung with sullen desperation to the customs of the past.

HOW KIKELA SAVED AN AMERICAN FROM THE CANNIBALS' POT

I have mentioned the missionary Kikela, and no account of the islands should overlook one incident of his career. Himself a full-blooded Polynesian and sincerely intent upon the conversion of the Marquesans to Christianity, he came to the Bay of Puamau about 1858, and labored faithfully, although futilely, with the fierce tribe which inhabited the valley.

The savages have never been partial to "white meat," and it is probably due to this fact that many whalers and traders escaped the oven. But during Kikela's residence at Puamau a blackbirder had succeeded in carrying off several men and women, and the warriors swore vengeance on the next ship which entered the bay.

This chanced to be an American whaler. The first mate, a man named Whalen, went ashore with a boat for water and food. The crew succeeded in getting back to the ship, but Whalen was captured, and preparations were at once begun for converting him into "long pig." Kikela protested loudly and long, but the king and his warriors gave him scant attention. The combination of revenge and food was too seductive to be overcome by religious argument. Finding his pleading and wrath of no avail, Kikela rushed to his hut, returning shortly with his two most cherished possessions, a muzzle-loading rifle and an old black frock coat, the treasured badge of his clerical office.

THE MISSIONARY'S LAST TRUMP

These he offered as a ransom for Whalen. The king wavered. He had long coveted that coat, but "long pig" was scarce and revenge was sweet. Kikela had one last trump, a large, ornately carved canoe recently completed by the best boat-builder of the bay. In desperation he offered it also—and won.

Garbed in Kikela's frock coat, the gun on his shoulder, the king ordered Whalen released, and with much ceremony escorted him to the beach. Kikela restored the mate to his schooner with a suggestion that a speedy departure from the bay would be the part of wisdom. Needless to say, the advice was instantly acted upon.

On his return to the United States, Whalen made public his thrilling experience; whereupon President Lincoln, in the name of the American people, sent Kikela a written testimony of their appreciation of his act and a handsome gold watch appropriately engraved.

Kikela has long since gone to his reward, but the watch, no longer a timepiece, is still an object of admiring veneration in the hut of a brother who later followed him from Hawaii and now lives on Uapu, where I saw the interesting souvenir a few months ago.

A MARQUESAN MIRACLE—THE LEGEND OF UAPU'S SAND-FLIES

It was on this island of Uapu that a latter-day miracle occurred some fifty years ago. In some unknown way two bays in the Marquesas, that of Hatiheu on Nukuhiva and Hakahetou on Uapu, became infested with a tiny but extremely vicious sand-fly whose bite when scratched becomes an ulcerous sore. The natives suffered constantly from the pest and could find no relief.

Finally, the king of the tribe, when he was about to die, called his few remaining warriors about him and announced that, although he had not been able to spare them from sickness and misery during his life, owing to the greater power of the white man's gods, he could by his death reëstablish his prowess, and he would demonstrate it by taking with him all the sand-flies on Uapu.

That night he died, and by morning every sand-fly had disappeared!

Not only the Marquesans, but the white traders and French officials, vouch for the fact that there *were* sand-flies on Uapu; that the king *did* say he would take them with him, and *I* know that they are not there now; and further, deponent sayeth not.

Unfortunately, Hatiheu was not included in the king's domain, and I have unforgettable recollections of the diminutive pests in that bay.

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During the first fifty years of French occupation there was a really sincere effort to convert the Marquesan and make him an industrious Christian. Small churches were built in several of the bays, and later a tiny cathedral at Ataona with a bishop, and a convent in which the nuns were to instruct the savage maiden in civilized arts and manners. With the assistance of the French officials, schools were conducted by the priests, and under the forceful persuasion of soldiers the fertile bays planted to coco palms and the copra industry begun.

As the making of copra consists merely of splitting the ripe coconut and permitting it to sun-dry for a few weeks, this did not entail any great amount of labor, and it has become the sole industry of the islands.

From 1850 to 1870 several efforts to raise cotton were made by colonists, who came assured of French authority and protection, but these all failed, and some of the colonists and their imported Chinese laborers lost their lives.

REJECTS CIVILIZED CUSTOMS AND LOSES HIS OWN

After quelling the rebellion on the island of Hivaoa thirty years ago, the French withdrew their military establishment and practically abandoned the Marquesan to his fate. A semblance of control is kept up with an administrator and one or two other officials at Ataona and a few gendarmes scattered about the group.

The schools have disappeared, with the exception of a little palm-thatched hut in Ataona, where a few children, French half-breeds for the most, sometimes have a teacher.

The little convent at Ataona still houses four delightful old ladies, the fearless nuns who came to this savage land more than thirty years ago, but there are no classes now for them to instruct in maidenly arts and deportment.

Not only does the Marquesan refuse to receive the white man's culture; he has lost his own as well. His vices he has retained and added to them those of the race which conquered him, but his own peculiar arts and virtues have disappeared. The making of tappa cloth ceased, save in rare instances, many years ago, to be replaced by the cotton cloth of the trader. In Ataona and a few other villages the priests succeeded in forcing the Marquesanne to cover her body with a hideous nightgown effect, which some of them wear when the priest is about or a trading schooner comes in, and a more unsightly or incongruous garb has never been devised.

TATTOO ARTISTS AND WOOD CARVERS HAVE VANISHED

There has not been a paddle or a *poi-poi* bowl carved for a generation. The famous tattoo artists are dead, and with them died their art. In some of the bays I have seen some of the young men partially and poorly tattooed, but the really beautiful work still to be seen on the bodies of all the older men and women has passed forever.

The making of *namu chi*, koko gin, goes on with but slight interruption, and to it has been added a vile beer made of fermented oranges or bananas, and alcohol in any form they can procure from an occasional trading schooner. I was somewhat puzzled at the Marquesans' great craving for perfumes and toilet waters until I discovered that a four-ounce vial of "Mary Garden" was merely a Marquesan cocktail, and a pint of Florida water rated as a fair quality of gin.

While the little schooner which took me to Tahuata was lying in the Bay of Vaitahu, a fierce old chief, tattooed from head to foot and wearing a head-dress of human hair encircled with chips of bone and shark's teeth, paddled out and boarded us. He threw a lot of five-franc pieces on the table and demanded strong waters.

A CHIEF WHO WAITED IN VAIN

The skipper, an old South Sea trader, was equal to the occasion. He produced a long black bottle containing about two quarts of liquid and sold it to the chief.

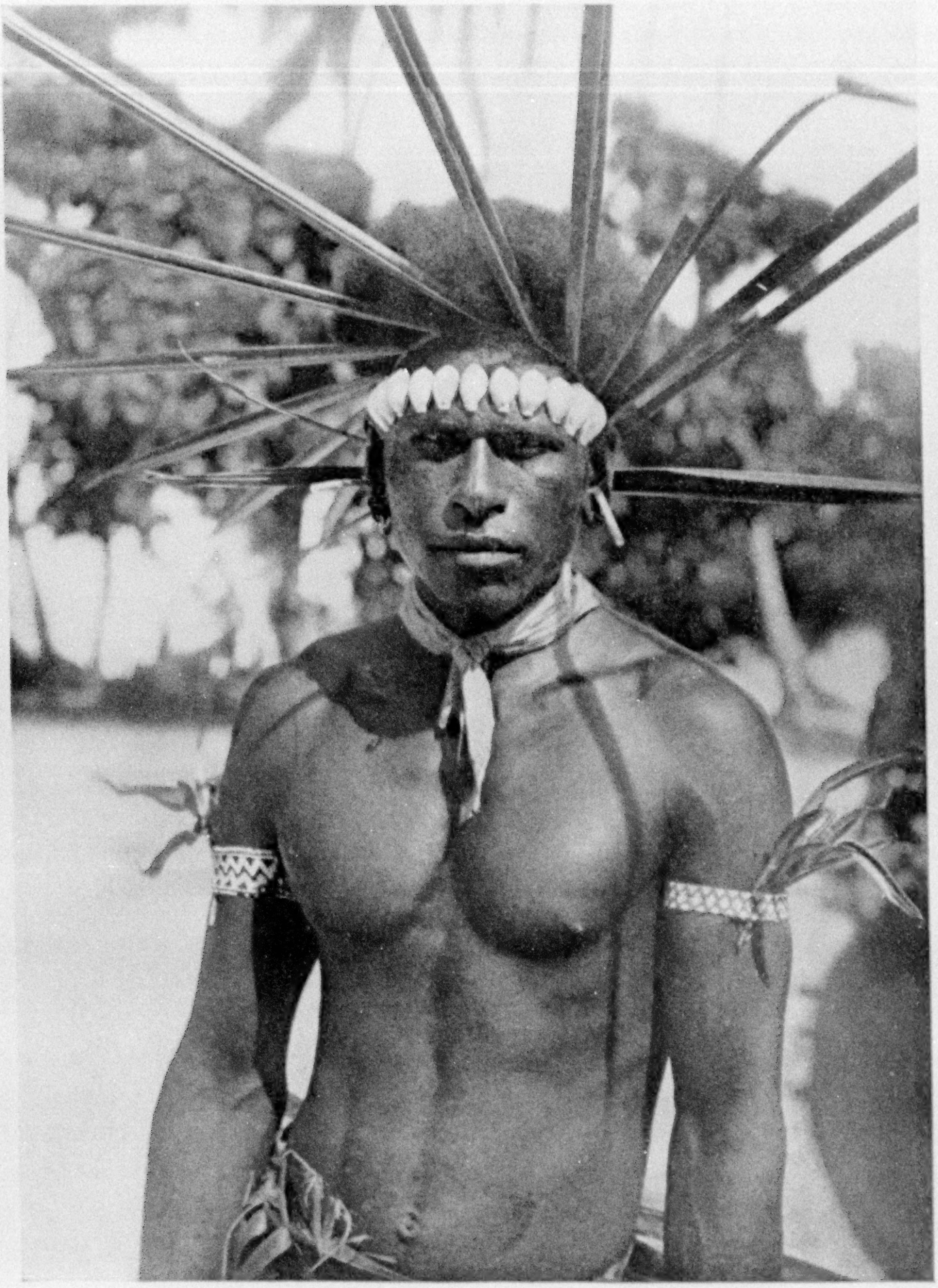
"Don't drink it here," he told the old savage. "You get me into trouble. Take it ashore, drink it, wait three hours, then you get fine drunk." This, of course, in Marquesan, as few outside the village of Ataona understand any language but their own.

XUM

Photograph by John W. Church

A PERI OF THE MARQUESAN PARADISE

To the Spaniards under Mendana, who discovered the Marquesas Islands in the sixteenth century, the archipelago seemed an enchanted land of delight. According to tradition, a number of Mendana's crew, enraptured by the beauty of the native women, fled to the hills with a score of the most attractive maidens, and there they lived happily ever after. From this adventure, so runs the legend, there sprang a tribe of beautiful red-haired women and fierce warriors. Several native women and boys with rich auburn hair are to be found on one of the islands today.



Photograph by Martin Johnson

A DANDY OF THE SOUTH SEAS

Three thousand or more years ago there was a great migration from the Asiatic Archipelago which peopled the numerous groups of islands of the South Pacific with cannibal savages of kindred Polynesian blood.

XUM

The chief went ashore with his bottle of harmless grenadine syrup, and I with him.

Within an hour he had consumed the entire contents, and sat somewhat impatiently awaiting the promised drunk. Meanwhile the schooner sailed quietly away.

By sunset I was watching an ebullition of disappointment and unbridled rage by a stone-sober cannibal chief that left nothing to the imagination of his audience. Skippers of trading schooners rarely go ashore in these bays, and I am inclined to believe their judgment good.

The last official recognition of cannibalism here was many years ago, but of unofficial reports and rumors there are many, the latest less than two years ago.

THEIR CANNIBALISTIC APPETITES STILL SURVIVE

There is no doubt that the Marquesans today are as fond of "long pig" as in the years past, but the opportunities are greatly decreased and the penalty of transportation and long imprisonment certain should they be caught. Nevertheless there are several villages where tribesmen from other valleys will not go even now unless in force; and their wisdom is bred of experience.

Only six of the eleven islands are now inhabited, and but a few villages on these. The valley of Taipi, on Nukuhiva, made famous by "Typee," Herman Melville's beautiful classic of the South Seas, is now given over to the silence of the jungle. It was difficult to realize that this utterly desolate valley, where nothing now remains save the terraces hidden beneath a rank tropical overgrowth, was, less than a century ago, the home of many thousand savages leading the carefree, luxurious life Melville has described so picturesquely.

The French official *Annuaire des Etablissements Francais de l'Oceanie* for 1915—the figures were compiled in 1914—gives the population of the Marquesas as 3,004. I have recently completed a journey throughout the islands, during which I visited every inhabited bay and village. My count gives a population now of 1,950, a decrease of more than 33 per cent in less than five years!

THE VANISHING RACE

The official report gives sixty known cases of leprosy, and I saw considerably more than that number scattered about the six islands. The actual proportion of lepers to the population will never be known, but it is very large. As leprosy takes years to develop to a degree where it can be detected readily, many who are now afflicted with the dread disease without knowing it will die of other causes in the next few years. Admittedly, the ravages of tuberculosis and other insidious diseases are beyond any hope of enumeration.

The average death rate throughout the islands is at least eight deaths to one birth, and in many villages runs higher. The ratio of men to women is about seven to one, and they live in practically the same communal polyandry as in the old days.

With these vital statistics available, it can be seen that not only are the days of the Marquesan numbered, but the number is exceedingly small. I do not believe that there will be a full-blooded Marquesan alive in ten years. M. La Garde, administrator of the group for 1906-7, agrees with me in this conclusion.

There can be no doubt whatever that today this drunken, disease-ridden remnant of the Marquesan race is beyond redemption; and all the French colonial administration can do is to pursue its present policy of nominal supervision and let the natives die off as speedily as possible.

As I stood for the last time in the beautiful valley of Puamau, looking through a tropical forest of fruits and flowers to the quiet bay far below, I could but ask myself the question: If prophetic vision had been granted Captain Cook would he not have sailed silently past the Illas Marquesas de Mendoza? I wonder!

XUM

A MEXICAN LAND OF CANAAN

Marvelous Riches of the Wonderful West Coast of Our Neighbor Republic

By Frederick Simpich

Formerly American Consul at Nogales, Author of "Where Adam and Eve Lived," "Mystic Nedjef, the Shia Mecca," etc.

"VAMON-O-O-S!" yelled the conductor, and the long mixed train for Guaymas started with a jerk. From the tail of its caboose I looked back at Nogales, sun-bathed and lazy, sprawling indolently astride that historic line called the Mexican border. From beside us, as we gathered speed, tin-roofed adobe shacks and groups of loitering peons slid back into the wood-smoke haze that hinted at native breakfasts of beans and burnt coffee.

From a wayside corral rose a burst of oaths and clouds of dust, as into its "dip-tank" yelling cowboys urged a herd of sullen steers; a mad tangle of hoofs, horns, and tails they were, but Uncle Sam says incoming cattle must take this creosote bath, lest they carry fever ticks that might injure our own source of T-bones and prime ribs *au jus*.

Past stunted live oaks we glided and into a shadowy canyon, its sloping sides marked with cow-paths like terraces. Up a stony trail a mule train plodded, packed with cases of dynamite, bags of flour, and provisions, bound for a mine hidden somewhere in the distant blue hills of Sonora—hills of incredible riches. And far to the south of us, for a thousand curving, twisting miles, the pioneer railroad pushed its way, down into that Promised Land of Mexico, the far-flung famous West Coast.

WHERE THE COLORFUL LIFE BEGINS

The change in plant and animal life and industries as you pass from Arizona into Mexico is very slight for the first 200 miles or more. Had they not searched your trunk at the custom-house, and maybe charged you duty on that new camera, you might not have realized that you had crossed a frontier. It is only after you quit the high, rolling grassy ranges of northern Sonora and strike the Yaqui valley below Guaymas that a new world reveals itself. Here the bright, colorful life of the vast coastal plains begins.

Flocks of screeching green parrots flap noisily overhead. Skulking coyotes twist swiftly away into the *palo verde* bushes. At dusk spotted bob-cats lurk in the brushy trails, stalking rabbits. In smoky Indian camps along the railway Yaqui troops are on duty, patrolling the line against their wild brothers of the hills. One sees them making sandals from green cowhide or cutting a beef or a burro into strips and hanging the meat up to dry. From their outposts come the dull signal-beats of their tom-toms. "The sound of that drum always gives the enemy an earache," a Mexican officer told me.

A LAND OF WONDROUS LURE

Beyond this Yaqui zone lie the vast level plantations of cane, corn, beans and tomatoes, and that important Mexican crop, the "garbanzo," or chick-pea.

It is a land of wondrous lure, rich in romance and adventure, is this magic West Coast. From Acapulco to Arizona the impious bones of buccaneers are strewn; and along this same age-old Aztec trail intrepid padres fought their way, building fort-like missions and carrying the cross to arrogant Apaches and pagan Papagos. From Cortez and Sir Francis Drake to the American miners and planters of today it has drawn restless men from the world's far places and ensnared them with its subtle charm.

Millions in gold and copper have been

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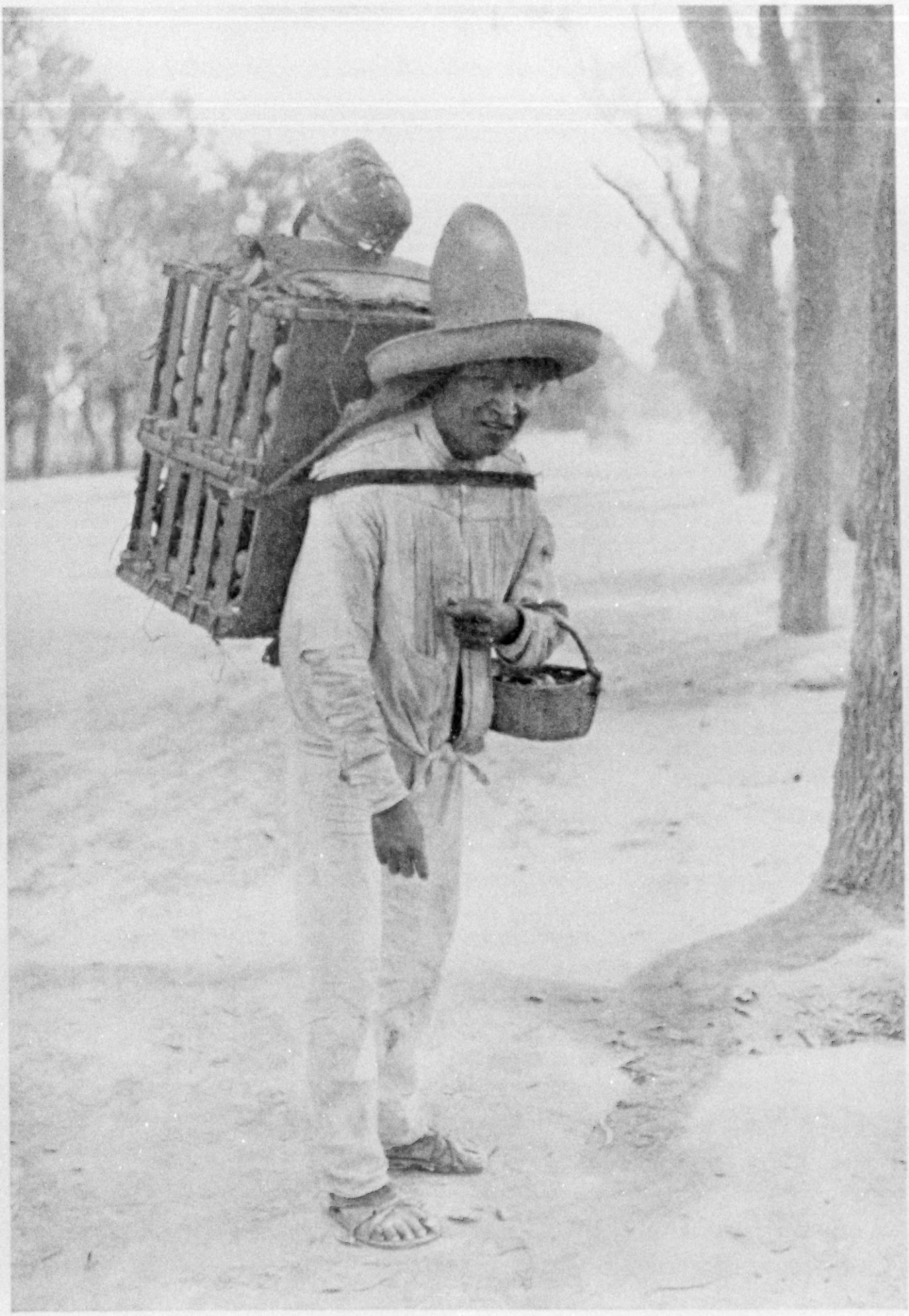


Photograph from G. M. Ker

OFF FOR MARKET

To the Mexican peon mind it is the hat, not the clothes, that makes the man. He may go barefoot and in tatters, but if he has his hat, which combines the flare of a Merry Widow with the exaggerated dome of a Derby, he will greet you with simple dignity and spontaneous cheer, betraying no rankling against a state of virtual serfdom owing to the land-tenure laws of Mexico.

wrested from its hills and fortunes in pearls fished from the hot waters of its gulf. Out of a lonely gulch in Sonora, Indians once took a nugget of 600 pounds, a chunk of pure silver so heavy it had to be carried away on a platform slung between two stout mules.

"The Mineral Storehouse of the World," Humboldt called Mexico; and a tale is told at Ures of one Señor Almada, who, on the occasion of his daughter's marriage, lined the bridal chamber with silver plates and paved the path from his house to the church with the same pale, chaste metal!

A FERTILE, UNKEMPT GARDEN

Yet if this West Coast were robbed today of all its gold and silver, its copper and graphite, it would still remain one of the prize regions of earth, a vast unkempt garden of startling fertility, alive with wild animals and birds—a Mexican Eden, where life is simple and easy. As one idler phrased it, "In Sinaloa you can kick your breakfast off the trees any morning in the year."

Of ranches and plantations there are many, of course, especially in the watered valleys; but the coast country as a whole is largely undeveloped, vast areas being still covered with jungle brush and wild grass.

The very richness of the mineral deposits and the fact that for generations the Spaniards worked only the mines, pausing neither to sow nor reap, tended to keep the country back. Indeed, as one old Mexican wisely said, "If all the work that's been done in our mines since Cortez went prospecting had been put to plowing and irrigating, we'd be raising grain enough now to feed fifty millions, instead of having to import flour and corn from the United States."

Ever since the Children of Israel set out for Canaan a certain inexorable law has led restless men of all races to seek homes where soil and climate make life easiest. Hence, indisputably and inevitably, a tide of migration must some day set in to this West Coast, just as it once flowed into our own empty west and into Canada. Mexicans alone cannot settle it and bring it to full fruition, for there are not enough of them, and they achieve better results with the stimulus of foreign aid and example.

Already hundreds of pioneer colonists—Americans, Chinese, and a few Europeans—are settled here. As merchants, miners, and planters, as doctors, engineers, and manufacturers' agents, these foreign residents are scattered all down this coast from Tia Juana to Tehuantepec.

In the Yaqui Valley one American corporation, originally organized by two far-seeing financiers, has already worked an agricultural miracle. Aided by American soil experts, plant wizards, and advised by such men as built the Roosevelt dam, it has cleared and watered thousands of acres and established a pioneer American colony.

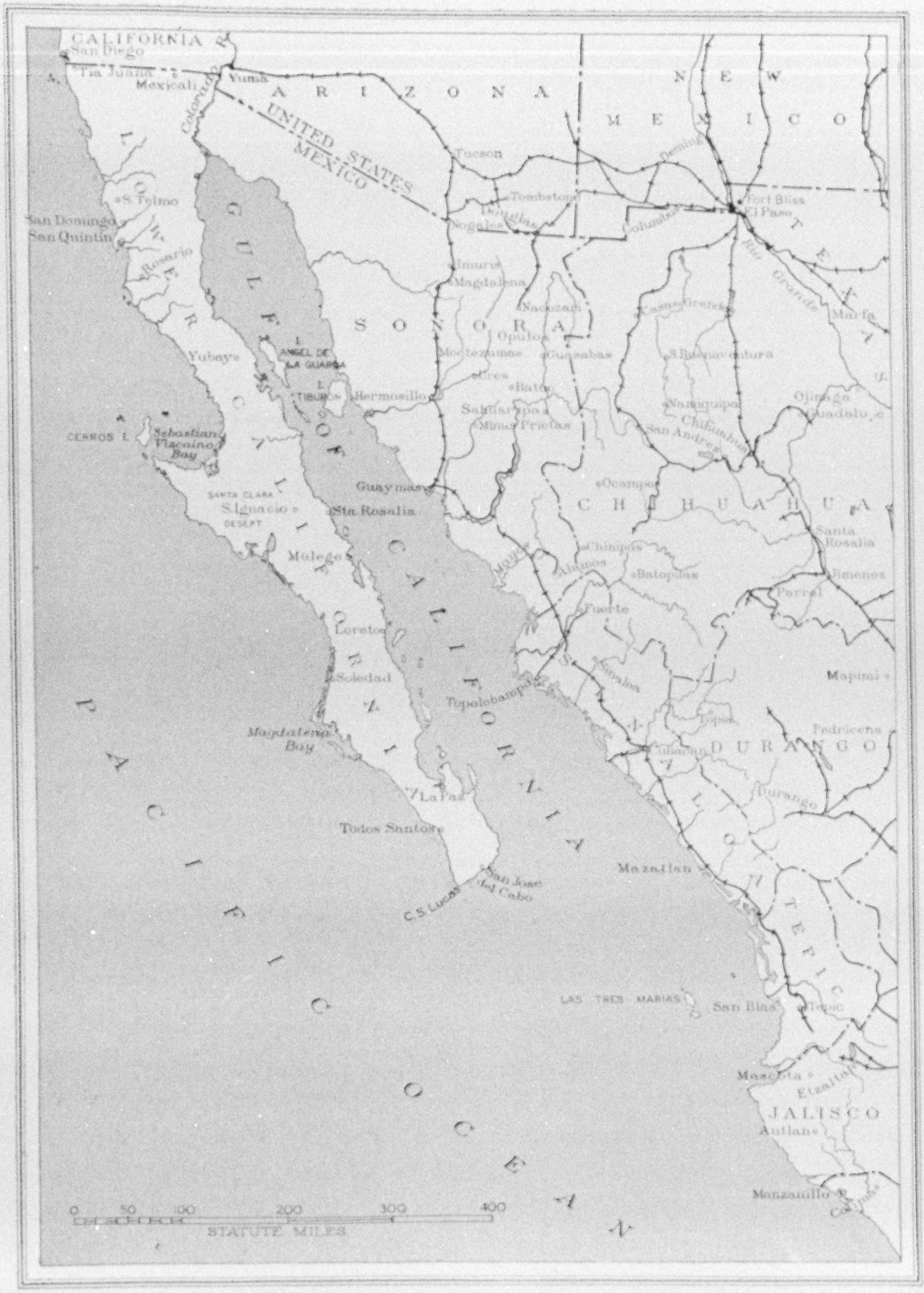
The shallow, weed-choked irrigation ditch that the Indians knew is replaced by long, deep canals with miles of laterals and take-offs, and giant dredges now move tons of mud a day where once the peon toiled with his frail shovel. Oil-burning tractors and marvelous gang-plows have crowded out the crude implements and scratching sticks of a decade ago.

In other places and in other ways the American immigrant's influence is setting up a higher standard of industrial and social life. At Nacozari, Sonora, a Yankee mining company has built a free club and social center for its Mexican employees; there are baths, pool tables, a library of Spanish and English books, and current periodicals.

Strikes have never disturbed this camp. Its American managers are required to learn the language of the country, to study the psychology of the people, and to respect their customs and traditions. When one of this company's native engineers sacrificed his life in an explosion to save many fellow workmen, the company named the town plaza in his honor and built a monument to his memory.

SONORANS "THE YANKEES OF MEXICO"

Here in Sonora the American idea has taken particularly deep root. Mexicans from other States call these Sonora natives "the Yankees of Mexico" because of their thrift, advancement, and close relations with the Americans. Practically



Drawn by R. M. Parker

A SKETCH MAP OF THE WEST COAST OF MEXICO AND THE PENINSULA OF LOWER CALIFORNIA

all families of the merchant and ranching classes send their children to schools in the United States.

These youngsters, returning to Mexico, are proud of their English (and their Yankee slang). They wear American-made clothes, dance all the popular "steps," and display an understanding of American ideals which can only make of them more friendly and helpful commercial neighbors in the years to come.

Even now the average home in northwest Mexico is largely furnished with American wares—the Yankee sewing-machine, the piano, graphophone, kitchen range, brass bed, and baby carriage are everywhere. And from Uncle Sam's factories our Mexican neighbors get most of their ready-made clothing, their shoes, hats, vehicles, farming implements, canned foods, and sporting goods.

SPANISH TAUGHT IN SCHOOLS A HOPEFUL SIGN

"The truth is," said a Mexican of my acquaintance, "we understand you Americans better than you understand us, because so many of us speak English and have lived or visited in the United States. Take my own case: I was educated in California. When I returned to Mexico as a young business man, I obtained the agency for certain American farm implements, and in a few years I was worth a million pesos.

"Plenty of American salesmen came to my part of the coast, competing with me, but I sold more plows and wagons than all of them put together, because I knew the language and mental processes of both races. Hire an interpreter and you hunt trouble. No man trusts another when he can't understand him. I've noticed it often.

"A hopeful sign of better relations between Mexico and the States, to me, is the fact that so many of your public schools are now teaching Spanish. Keep it up. It will help us to become better business friends."

A SHIP, A CARGO, AND A MARKET

It is said that in 1498, when Vasco da Gama sailed around the Cape of Good Hope to India and returned to Portugal with a cargo of spice and pepper, he made 6,000 per cent on the investment. There is more competition in the commission business now and profits are more modest than in Mr. da Gama's day, but the factors are the same—a ship, a cargo, and a market. And this coast is peculiarly our field. Our Panama Canal put it on one of the world's greatest highways; and our freighters, cutting the wake of the romantic galleons of old, now call at Guaymas, Mazatlan, Acapulco, and other West Coast ports. Already the trains that crawl down from the border are loaded with American machinery, dry goods, groceries, and everything the Mexicans need. It is our market now, linked with us by rail and sail, and we must keep it.

WHERE THE COW-MAN IS KING

The ratio of meat-bearing animals to human beings is probably higher in Mexico than in any other country, because so much of the land is fit only for grazing. Every year we Americans eat thousands of imported Mexican cattle, and in years to come we shall necessarily buy more and more beef from below the Rio Grande. Cow-men from our Western States long ago ventured into Mexico, and on its vast, unfenced ranges some Americans have built up enormous herds.

On one great American-owned ranch about 15,000 calves are branded every spring. In Sonora a certain Yankee cattle company's holdings are divided into nearly 200 pastures, and when the overseers motor about they carry with them a map of the ranch, showing the different trails, fences, and pastures. To make a complete inspection of the property a week's time is required. In many places water for the stock is obtained from wells equipped with wind or gasoline pumps. Little feeding is done, as the cattle can graze the year round.

Many of the same forage grasses that cover the great Arizona ranges are also found in Sonora and Sinaloa. The beans of the mesquite tree are likewise very fattening, and it is no uncommon sight to see a Mexican heifer stand on her hind legs and reach for the higher twigs of this succulent bush.

In some of the mountains many so-called "wild cattle" roam at large, un-

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Photograph from Frederick Simpich

HUGGING THE HOT RED ROCKS, GUAYMAS, MEXICO, REMINDS ONE OF ADEN, ARABIA

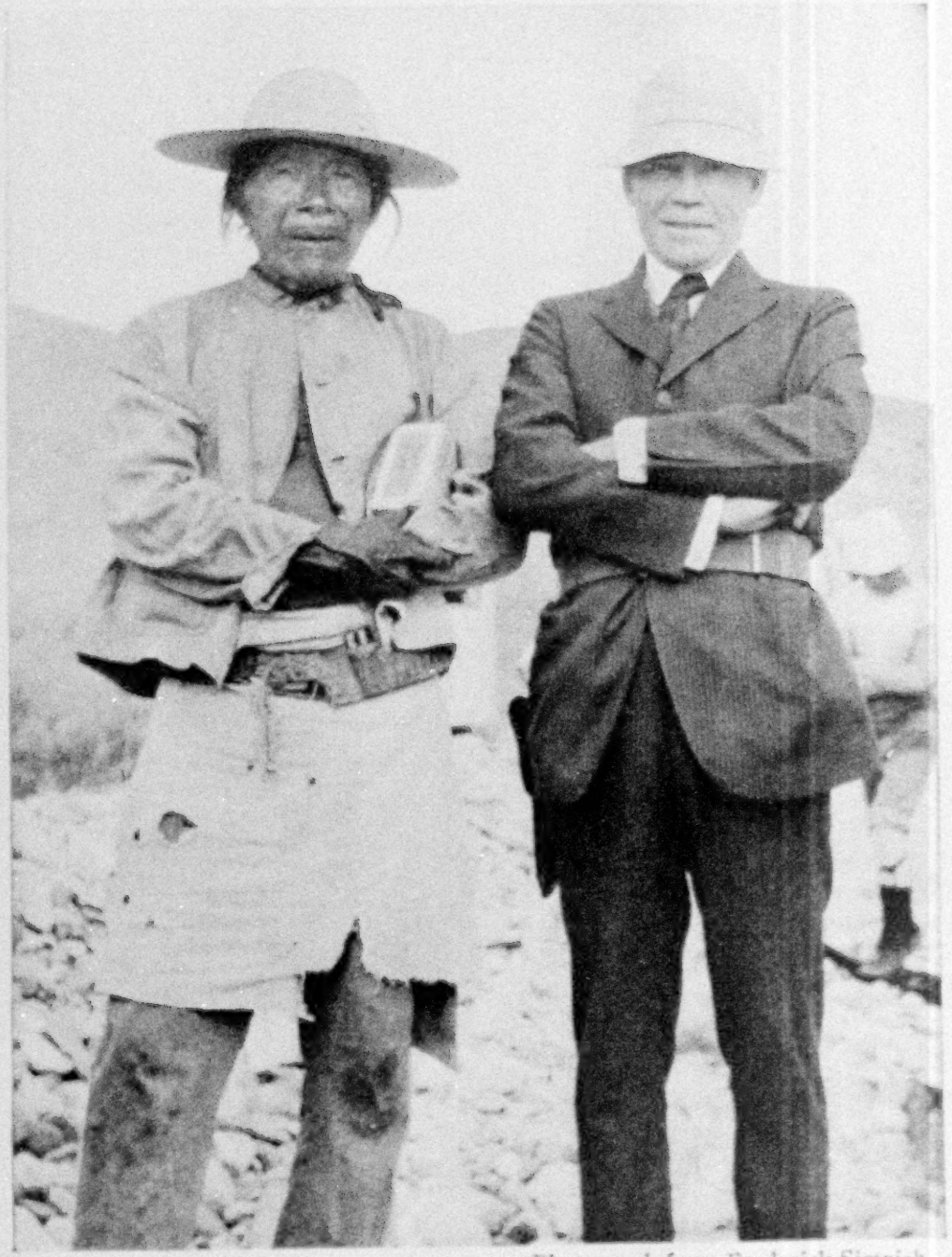
The barren hills behind the seaport act as gigantic reflectors of the tropical summer heat, which the residents combat with thick-walled houses and tightly closed shutters. "The contrast of the wide cobalt of gulf with the wide, flaming sky above it is most violent, imposing, awe-inspiring."

XUM

Photograph by Harry A. Lawton

THREE "REBEKAHS" OF SINALOA

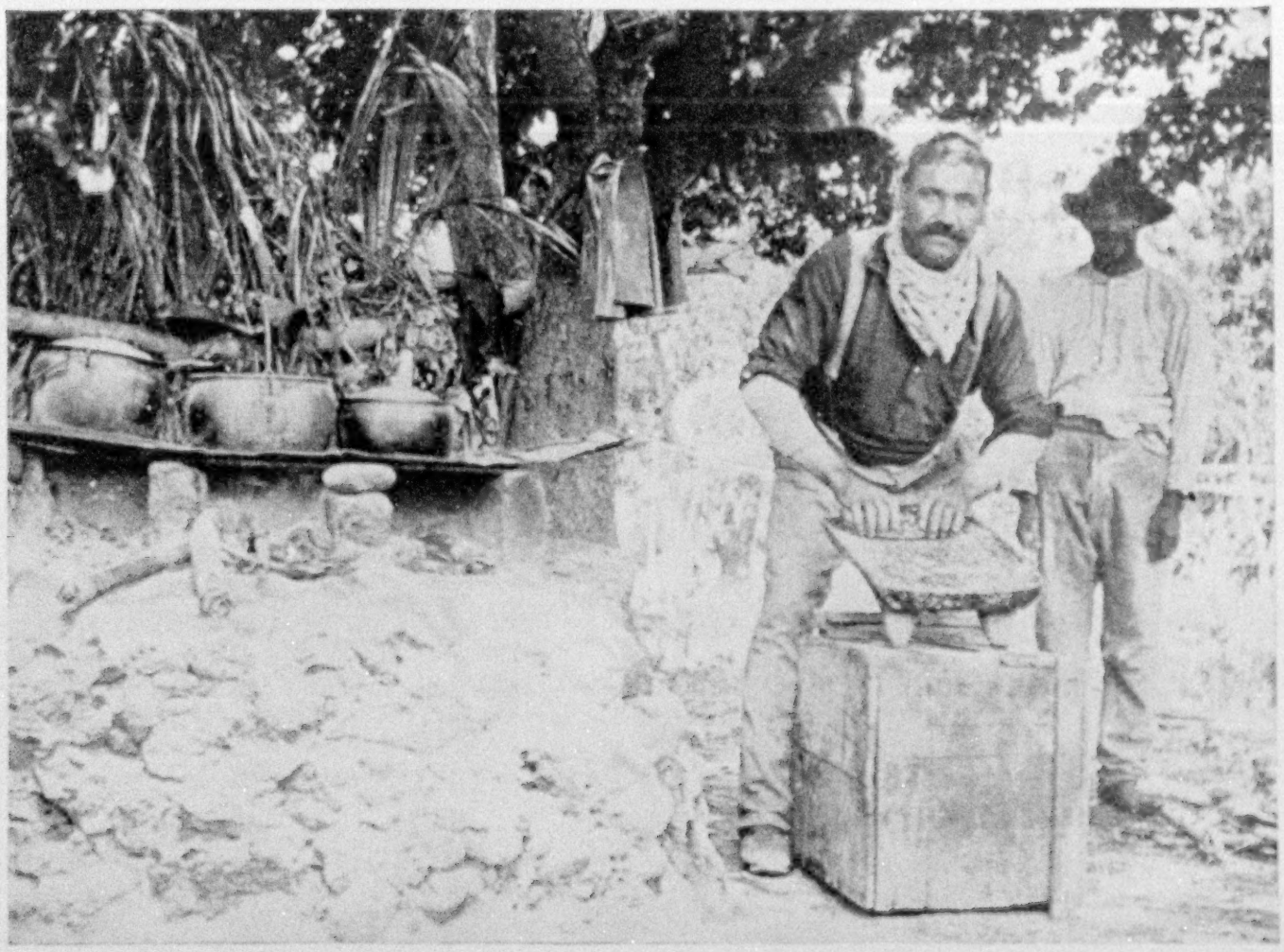
The complexion of the average Mexican girl inspires admiration or envy on the part of the visitor from the north, but the women of the peon class marry young, have a surprising number of children, and generally are faded and wrinkled at thirty-five.



Photograph from Frederick Simpich

THE AUTHOR AND THE CHIEF OF THE SERIS

Chief Juan Tomas, who rules the destinies of a tribe of degraded, poverty-stricken Indians inhabiting the island of Tiburon, in the Gulf of California, is the son of a Papago and of a Spanish girl who was kidnaped on the mainland many years ago.



Photograph from Frederick Simpich

GRINDING CORN ON A METATE TO MAKE TORTILLAS

The tortilla is the staff of life in a Mexican family. It is a sort of baked pancake, made of maize flour after the flour has been boiled with lime or water, and the resultant paste ground to a proper consistency on the *metate*, a volcanic stone in the shape of a druggist's mortar. A second stone serves as a combination pestle and rolling pin.

branded and free, timid as deer, they or their forebears having strayed from the unfenced ranches. In spite of the many milk cows at large, in all these ranch homes condensed milk is generally used. To rope, throw, and milk one of the wild cows is rather an exciting task, and frequently "Mollie, the kind-faced cow," will, when released, promptly chase her captors up the nearest tree.

AMAZING DIVERSITY OF PRODUCTS

No other crop on the West Coast is more talked of than the garbanzo, or chick-pea. Each season buyers come all the way from Spain, Italy, and Cuba, where most of these peas are consumed, and bid against each other, and, till the price is finally fixed, the excitement among the native growers is intense. The annual crop is worth several millions and is shipped out by rail through the United States.

Tomatoes, too, come from Sinaloa in hundreds of carloads every winter and find a ready market in our western cities. Rice and sugar, grown on the West Coast, are largely consumed in Mexico.

Each sugar-making season a corps of American experts goes to the West Coast from the mills of Louisiana to handle the crop of one of the American plantations. The taxes paid to the Mexican Government each year by this one sugar company alone represents a large fortune.

Wild coffee thrives on the hill slopes of Durango—a small but deliciously flavored berry—and thousands of natives gather their annual coffee supply from these uncultivated bushes.

THE BAT HUNTERS

One odd class of prospectors makes a good living hunting bat caves. In the hill countries of Sinaloa and Sonora the Mexican bat breeds by the thousands,

and makes its home in caves among rocky cliffs. Here deposits of guano accumulate, small fortunes being sometimes realized from the sale of one cave's deposits.

To locate a bat cave these guano-hunters work much as do the backwoods bee tree hunters in Missouri. They seek out a likely cliff, wait till dusk, and watch for bats. Soon, by close observation, they can locate the cave entrance from which the bats emerge. This bat is small, with flat head and broad ears, and gives off a musky odor.

That bright-red dye in the paper on your library wall probably came from away down in Sinaloa. But you would hardly have recognized it had you been at the receiving station in Culiacan the day the mule train got in from the hills, each animal carrying his 300-pound load of short, brown logs. It is in this form that the dyewood is shipped to the States, where it is ground and boiled. About 15 per cent of its original weight is soluble in water and represents dye matter and tannin.

Uncle Sam also colors much of his army khaki cloth by the use of Mexican fustic dyewood, which likewise comes from Sinaloa. The Yankee buyers in Mexico bargain for the wood delivered at the railway, where they take only the hearts of the logs, with the bark and sapwood chopped off.

There are extensive forests of this hard, heavy, dense wood in Sinaloa, and the railway company prefers it for making ties. Because of the tannin in it, the bugs, white ants, and other insect pests do not eat it; its durability in the ground is remarkable. One small railway line put in fustic wood ties 35 years ago, and they are still sound. This tree belongs to the mulberry family.

A FARM LESSON FROM MEXICO

Not long ago one of our farm lecturers at Columbia University was telling of some new wrinkles in farming that he had picked up on a trip through Mexico.

"One of these," he said, "was a variant of our recently adopted system of green manuring that I first saw practiced on a Mexican bean ranch. The bean vines were cut off with hoes just under the surface and the roots allowed to remain there to rot till the next planting time.

"The Mexican had never heard of putting nitrogen into his soil and was merely following the formula he had learned from his Spanish and Indian ancestors, but he was doing effectively just what thousands of American farmers have learned in the last generation to do—increase fertility by growing nitrogen-gathering legumes. But he did not stop there. All the bean vines, hulls, weeds, and field trash were raked into piles and were soon as dry as tinder. Each of these piles was buried with earth to a depth of perhaps six inches, so that the whole field was covered with mounds from two to four feet high.

"In due time an opening a foot in diameter was dug at the base of each mound, and the dry vegetation inside set afire. Then the hole was closed till barely enough air could enter to keep the fire smouldering, but not blazing, and the smoke filtered through the loose earth above till the whole field had the appearance of a nest of miniature volcanoes.

"After a few days all the combustible material had burned out of the mounds and they were broken down and scattered. From the Mexican rancher I learned that the practice had always been followed by good farmers in Spanish America and that it had been brought from Spain in the earliest times."

MORE TRANSPORTATION IS NEEDED

Until recent years this coast zone was utterly cut off from the rest of the world except by sea. Even now no railway, and not even a passable wagon road, runs east and west across northern Mexico. In fact, few rich, civilized regions anywhere have so few miles of railway, in proportion to their area and importance, as this West Coast of Mexico.

The north and south traffic is served by only one road, that of the Southern Pacific of Mexico (owned by the American company of the same name), whose railhead in 1910 had been pushed as far as the picturesque old city of Tepic. Here, at the beginning of the Madero revolution, construction work was suspended.

Eventually this line will be built

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Photograph from Frederick Simpich

AN INDIAN GIRL WASHING CLOTHES IN THE YAQUI RIVER: MEXICO

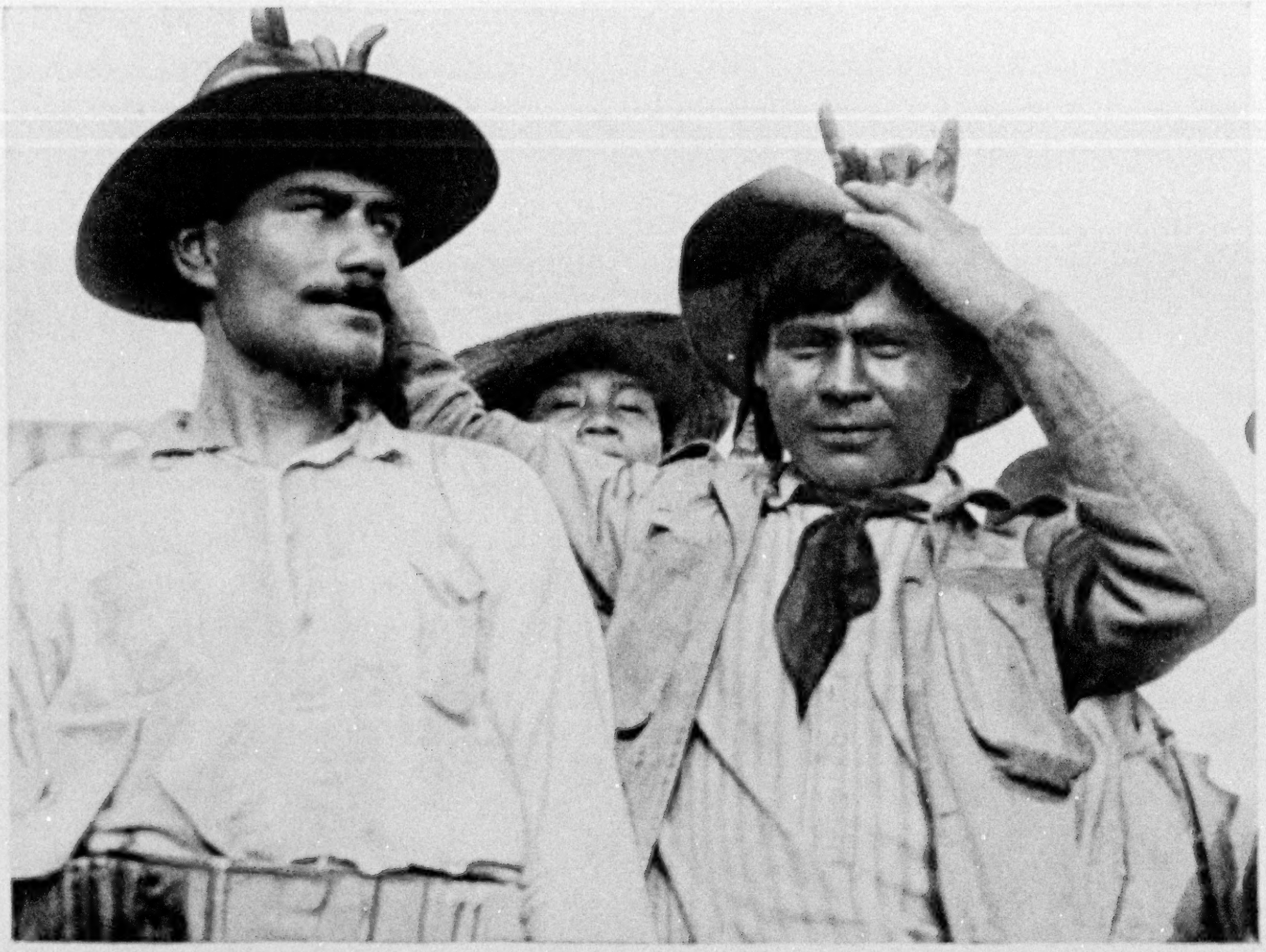
This is a daughter of one of the poorest and wildest Indian tribes of northern Mexico. The Yaquis are comparable to the Apaches. They could never be accused of godliness, but cleanliness among them, as among the Mayas, to the south, is a highly developed virtue. Note the Yaqui clothes-drying device, which makes every laundry day a fashion show.

XUM

Photograph by Harry A. Lawton

IN A THIRD-CLASS COACH AT CULIACAN: SINALOA

No straps on which to hang in this common carrier. Just sit in your neighbor's lap or on the window sill.



Photograph by Dane Coolidge

"PUTTING ON DEER HORNS"

A favorite gesture of the Yaquis, the tribe that long has constituted the most lawless element of Sonora and has figured in many of the forays at the border town of Nogales. Even under the Diaz régime the Yaquis refused to recognize the Mexican Government. This attitude led to the assignment of troops to exterminate them, but since these troops received extra pay they were provident of a good job, and no great inroads were made upon the rebels.

through to Guadalajara, and thus connect San Francisco and Mexico City by a direct route. And, if an original plan is carried out, the line will be extended to Salina Cruz, the West Coast terminus of the Tehuantepec Railway.

Just now this latter 1,100-mile stretch of fertile coast country is without a railway service to the north, and European freight arriving over the Tehuantepec Railway must be hauled by water up to Manzanillo and Mazatlan.

Wagon roads, too, are almost utterly lacking. Interior freight is carried largely by burros. In its more prosperous days thousands of pack-mules were used for carrying the back-country trade of Mazatlan alone.

THE ENGINEER WHO LOST HIS CAP

During the last year of the Great War the towns of western Mexico suffered no little hardship through lack of transportation; for weeks at a time not a vessel called at once busy ports like Guaymas.

Life among American merchants and planters settled on this West Coast is not unlike that of the colonials in India, China, or the Philippines. Servants are numerous and cheap. Fruits and vegetables grow in abundance. Nobody hurries. Nervous breakdowns and "worry" headaches are unheard of.

Even the leisurely trains reflect the "mañana" spirit. Not long ago I was a guest in the private car of a railroad official. We were running as a special, but seemed to be moving strangely slow even for a Mexican train. "Go up ahead," the official told our brakeman, "and tell the engineer to speed up a little."

In a few minutes the brakeman came back and explained:

"The engineer says that coming up last night his cap blew off and went out the cab window. He wants to run slow going back to see if he can find it."

"Fair enough!" growled the official. "The only quick thing in these parts is the Mexican jumping bean."

THE FISHERMAN'S "PROMISED SEA"

Ask any United States Navy officer who has "done a hitch" in Guaymas waters what the fishing there is like! "When they're biting good, you've got to hide behind a rock to bait your hook!" I once heard a sailor declare. Trolling for *toro*, red snapper, skipjacks, Spanish mackerel, yellowtail, cabrillo, and other sea fish is a favorite sport.

Once the fish-run came so fast and thick, crowding the sea so closely about our boat (we threw sardines overboard as bait), that we took in all except 15 feet of our lines, and actually caught the particular fish we wished out of the mixed school that leaped after us!

"Not you, but you!" my excited companion would shout, jerking his spoon from before an undesirable fish and tossing it in front of a choicer species. Then an eight-foot shark, darting suddenly up, grabbed the leaping skipjack I was playing, and took my fish, line and all, and much perfectly good American skin from a raw and smarting palm.

There are more fish and more kinds of fish in the Gulf of California, it is said, than in any other known body of water. A cannery built here could provide food for thousands. Just now the surplus tons of fish serve principally to support countless pelicans, cormorants, and other fishing birds that swarm on the rocky shores and islands of the Gulf.

WHERE WILD FOWL ARE A PEST

Comparatively few fish are captured by the Mexicans, who employ no modern means. The natives are without nets and trawls; they usually "still-fish" at a depth of 100 feet or more for the giant jewfish and tortuava. Each boatman carries a short, stout club, and when he finally gets his fish to the surface and alongside his boat he kills it by pounding it on the head; then he drags it aboard.

The rice planters in the Yaqui Valley will gladly buy you a supply of ammunition and lend you a shotgun if you will spend your next vacation down there. At irrigation time, particularly, the wild fowl become a pest, for this West Coast lies on one of their great migration routes. From a blind beside a rice field I once got 22 redheads in less than an hour, working a 16-gauge shotgun as the evening flight came in. There are geese, too, and brant and curlew and many varieties of shore birds.

Here also the California or "valley" quail is amazingly abundant, especially about the wheat and tomato fields. Around unusually good feeding grounds you will find these birds not in coveys, but in armies, frequently 500 or 1,000 of them feeding together in one field. They are numerous in the mesquite covered hills also, and a covey may often be located by watching for the hawks that circle above the thicket where the birds are hiding.

Among the rolling foothills, where they feed on acorns, myriads of "white wing" or Sonora pigeons make their home. At nightfall these birds flock down to the water holes or irrigation ditches by the thousands.

Here is an American happy hunting ground for those who love the rod and gun. Some day, when its charms are better known, Guaymas must become a popular winter resort of soft breezes, blue seas, and ideal January outdoor days.

WILD ANIMALS ABOUND

At Agua Fria Ranch, in Sonora, the Americans keep a professional lion-hunter, with a pack of trained dogs. Unless their prowling raids were continuously resisted, the wild beasts would soon overrun the ranch. Last year this hunter killed over 50 animals, including lions, tigers, and wildcats. Once he went into a deep cave after a wounded tiger, carrying his pistol in one hand, his torch in the other.

The ranchers complain that it is almost impossible to raise colts, especially in the hill countries, for lions have been known to leap a 12-foot corral to get at them.

The "burra" or black deer, and also the white tail, are very common. Ante-

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Photograph by Harry A. Lawton

AN AMERICAN STEAM-SHOVEL DIGGING ACROSS THE CACTUS-GROWN PLAINS AT THE FOOT OF MOUNT ORIZABA, QUEEN OF THE MEXICAN ANDES AND SACRED MOUNTAIN OF THE ANCIENT AZTECS

The Aztecs were the original canal-builders of the New World, and half a century before the arrival of Columbus those accomplished people were at work on a "big ditch" to drain their capital, situated in a valley which once had been a lake and which occasionally reverted to that condition. This Aztec Venice not only had waterways for streets, but rafts for foundations, until Cortez built the latter-day Mexico City on dry land.

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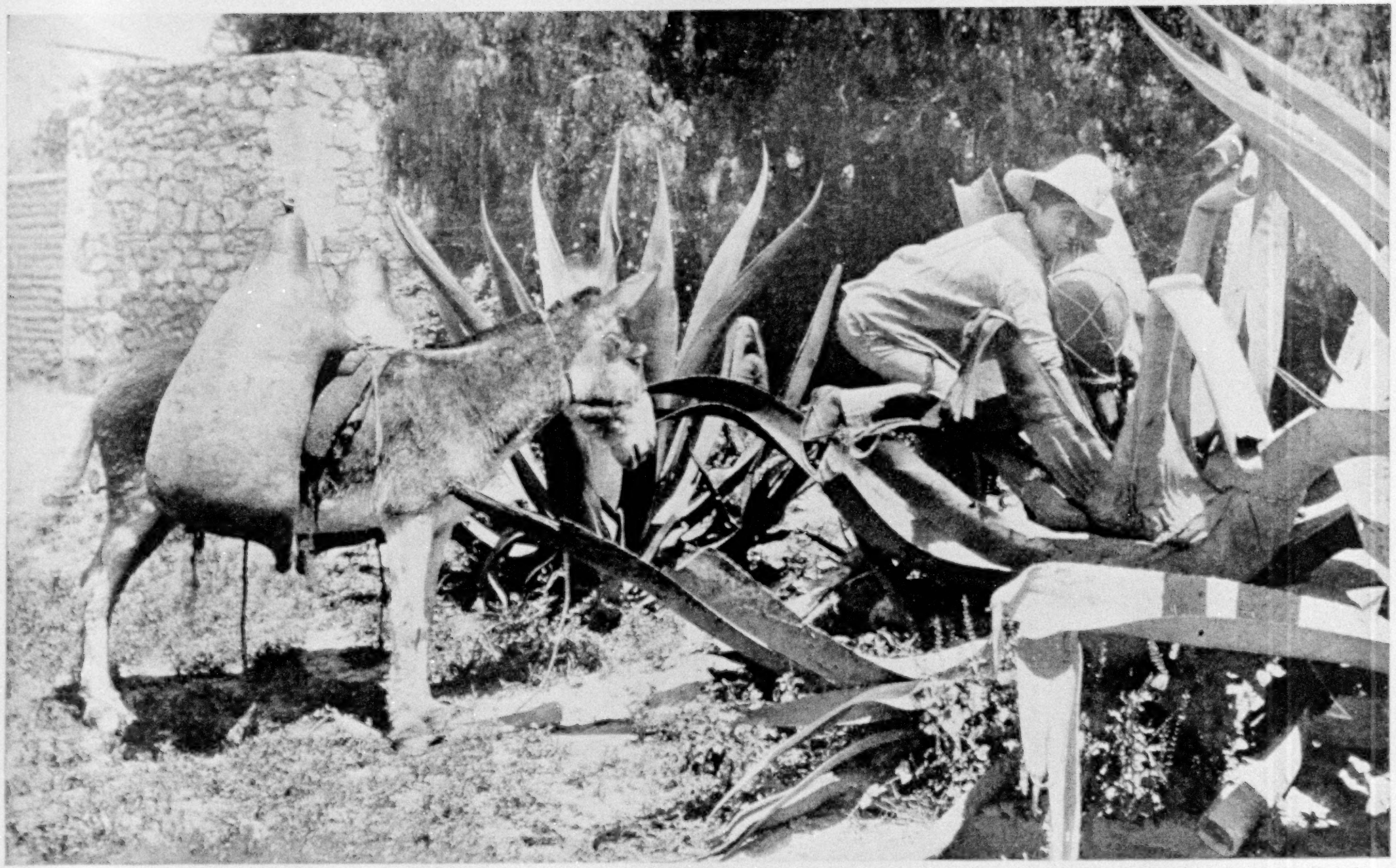

Photograph from Russell Hastings Millward

GATHERING PULQUE IN MEXICO

The favorite "fire-water" of the republic to our south is made from this aloe or maguey plant. In the higher altitudes, as in the State of Mexico, it attains an excellent growth, and vast fields are laid out in symmetrical rows. One tradition says the downfall of the ancient Toltecs was due to pulque. A beautiful maiden named Xochitl, daughter of a noble called Papantzin, is reputed to have discovered this insidious drink. Her people, the Toltecs, antedated the Aztecs and in some mysterious way were swept from the face of the earth.

Photograph from Russell Hastings Millward

THE MARKET AT GUANAJUATO: MEXICO

Note that the men wear trousers instead of the typical pajama-like costume of the Mexican. Formerly a recognized means of getting labor for public works in Mexican towns was to arrest road-builders, carpenters, masons, or whatever class of worker was needed, on some flimsy charge, and sentence them to "hard labor" for a requisite period on municipal projects. Some years ago Guanajuato introduced a variation in this practice and replenished its treasury by fining all natives coming into town in the usual garments. There also was a suspicion that some enterprising trousers-maker had influenced the city government. After their first surprise, the crafty country folk evaded the fine, and also avoided making a run on the trousers market by buying one pair per community and arranging schedules by which the busy trousers became ambulant jitneys, making three or four trips per day with different passengers.

lope are still seen in north Sonora. While hunting on the coast near Port Libertad our party jumped a herd of 35 antelope.

Nor must you go far into the Canadian north or run over to Tibet to hunt the wary bighorn. Here in northwest Sonora you can shoot him, if you can stand the heat and strain of a climb over blistering, inhospitable rocks, and can stalk and hit him after you locate him.

One American hunter I know counted 24 of these majestic animals, filing in solemn dignity from the mouth of a mountain cave, in Lower California, where they had lain to escape the midday heat. Afterward, exploring one of these caves, my friend found an odd mat, ancient and tattered, made of human hair. There were scraps of broken pottery, too, and a worn sandal of braided grass.

On some of these cave walls are scratched crude drawings of men and animals. These petroglyphs occur from Tucson all the way down to Guadalajara—dim, puzzling records of a vanished race.

A DIVERSITY OF RACES IN MEXICO

Few Americans realize the diversity of races in Mexico. From Sonora to Yucatan over 50 separate dialects are spoken. All the inhabitants of the West Coast, however, with the exception of some hill tribes of Indians, can understand Spanish.

Of these Indians the 8,000 Yaquis, with their crude Bacatete hill forts, their weird ceremonial masque dances and their warlike attitude, are easily most conspicuous. Many are enlisted with the federal army or employed as ranch hands and mine or railroad laborers.

General Obregon tells a story, typical of the Yaqui's subtle mind. Obregon once had occasion to warn his men against wasting their ammunition by shooting from the moving trains at objects along the road. Halted one day at a station, Obregon heard a shot and saw a Yaqui lowering his rifle, smoke floating about him. He went out personally and rebuked the Yaqui.

"But, my General, I did not shoot," pleaded the Indian. "It was some one who was here yesterday. The smoke you see is *old smoke*."

The Yaquis with the federal troops are termed "Manzos," or "tame" Yaquis; those in the hills, wild and hostile, are the "Bronchos." The latter are a vagrant lot, robbing ranches for food and animals, carrying rawhide drums and water gourds, wearing sandals of green cowskin—living by their wits. Pressed by hunger, they subsist as well on burros as beef.

These burros, "the short and simple animals of the poor," thrive by the thousand on the West Coast. Many run wild, like "the wild asses of Mesopotamia."

The Maya Indians, some of whom still carry bows and arrows, inhabit the flat coastal plain south of the Yaqui region along the River Maya. Excellent laborers, peacefully inclined, many of the Mayas are trusted helpers on American ranches and plantations.

THE STRANGE SERIS OF TIBURON

Most of the well-advertised brands of wild men are fairly familiar to the show-going American public. The head-hunter, the Pygmy, the Bushman and his boomerang are all old circus acquaintances. But right here at home, within 700 miles of chaste and classic Los Angeles, there dwells a lost tribe of savages whose very name is known to but few of us; for this tribe has never been tamed, "uplifted," or even exhibited. Yet it is older, perhaps, than the Aztecs; it may even be the last living fragment of the American aborigines.

The Seris, these strange people are called, and they inhabit a lonely, evil rock called Tiburon (Shark) Island that lifts its hostile head from the hot, empty waters of the Gulf of Cortez. (Gulf of California it's printed on American maps.) And all down this coast the name of Tiburon is spoken with a shrug of the shoulders, for these Seris are thieves and killers. It is even whispered that long ago they were cannibals. However, they did not try to eat us or even hint at it while I was visiting them.

From where we anchored, off the north end of the island, it had seemed quite deserted; but no sooner had we waded from our whaleboat to the beach than two Indians appeared, carrying a flag of truce. Then came others, in swarms, venturing timidly from the mesquite and *palo verde* brush. They were tall men, mostly very slender, with straight black hair; their teeth were remarkably white and sound. Except for a few bows and arrows, all were unarmed. (Later I learned that they had hidden their few old rifles in a neighboring arroyo before showing themselves.)

A DISAPPOINTED CHIEF

One picturesque old man, clad in tattered rags, an antediluvian "Stetson," and rope sandals, advanced and asked in broken Spanish for the "Chief" of our party. We shook hands, and then, waiving further formalities, he demanded a drink. Our failure to produce alcohol had an immediate and depressing effect on old Juan Tomas, as he called himself. It also seemed to upset the rest of the tribe, who yapped and chattered excitedly for several minutes.

I was told afterward that previous exploring parties had invariably started negotiations with the Seris by offering whisky or mescal. Luckily I had brought some cigars, and when the tumult among the "wets" had subsided I produced these and gave them to Chief Juan Tomas. He made no move to pass them around; whereupon the other bucks again broke into noisy, jabbering protest. Then crafty old Juan lit a panetela, took a few puffs, and passed it to the Indian nearest

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him. He, too, took a puff and passed the cigar on to the next; it finally disappeared in the crowd. But Juan held tight to the box.

"What kind of a man is that?" demanded the Chief, pointing to a negro sailor in our party.

"Es Americano, tambien," I explained.

"He's not," insisted the Indian. "I've seen Americans before. They come here to hunt. They are not like that man."

But he did not pursue the subject or show any further interest in the black man.

After some parley, the Chief agreed to lead us to the Seri village. It lay down the beach half a mile, toward the Sonora side. But when we got there it was not a pueblo at all, as other Indian pueblos usually are.

It was little more than a place in the sand where the Seris ate and slept—just rude, flimsy shelters of mesquite and tules, or *palo verde* brush piled in circles about holes in the sand. Here and there a few big turtle shells were worked in or laid on the brush. No typical Indian huts, no tepees—not even the primitive but substantial "ramadah" of the Pimas; in fact, the abiding place of the Seri is no more of a shelter than the pigs and calves of Iowa find on the lee side of straw-stacks.

The Seri women, carrying bundles on their heads and chattering excitedly, fled up a canyon as we approached their village. But after a few minutes they began venturing back, timidly, curiously.

A CONCERT ON THE SANDS

To add to the gaiety of the occasion, we brought from our ship a sailor who played the mandolin. It was incongruous, ridiculous—a mandolin tinkling off "Casey Jones" on this lonely shore. But our music failed to soothe these particular savages; on the contrary, it made the men dance and the women giggle. Then one sturdy, long-haired Seri dashed into the brush and emerged with—well, a fiddle, for lack of a better word; just a square of dried hide, a stick with notches in it, and a "bow"—merely a dried reed. He squatted down, stood the piece of hide on edge, laid one end of the notched stick on the ground and the other end on the upper edge of the hide, and fiddled away—and sang. It was not unmusical, nor was it music, as our ears know it.

"Sounds like filing a saw," grunted one of our sailors.

"I'll say he's sho got some jazz in it," ventured George, the negro.

One buck volunteered to dance. He got a dried deerskin and laid it, hair down, on the sand. Leaping onto this improvised platform, with swaying body and waving arms the Seri scraped and patted the dried hide with his bare, calloused feet, keeping time to the whining fiddle.

Then, one by one, a small group of women ventured out from the brush and formed a half circle about the dancer and began to sing. They were a sad-looking chorus, to say the least—ragged, unspeakably filthy, their faces and limbs hideously tattooed with some blue coloring matter, and their foreheads daubed with white bird-guano.

In a worn canvas envelope, suspended on a string about his neck, the Chief carries an old letter signed by the Prefect at Hermosillo, acknowledging Juan Tomas as *Jefe* of the Seris and holding him responsible for their good behavior.

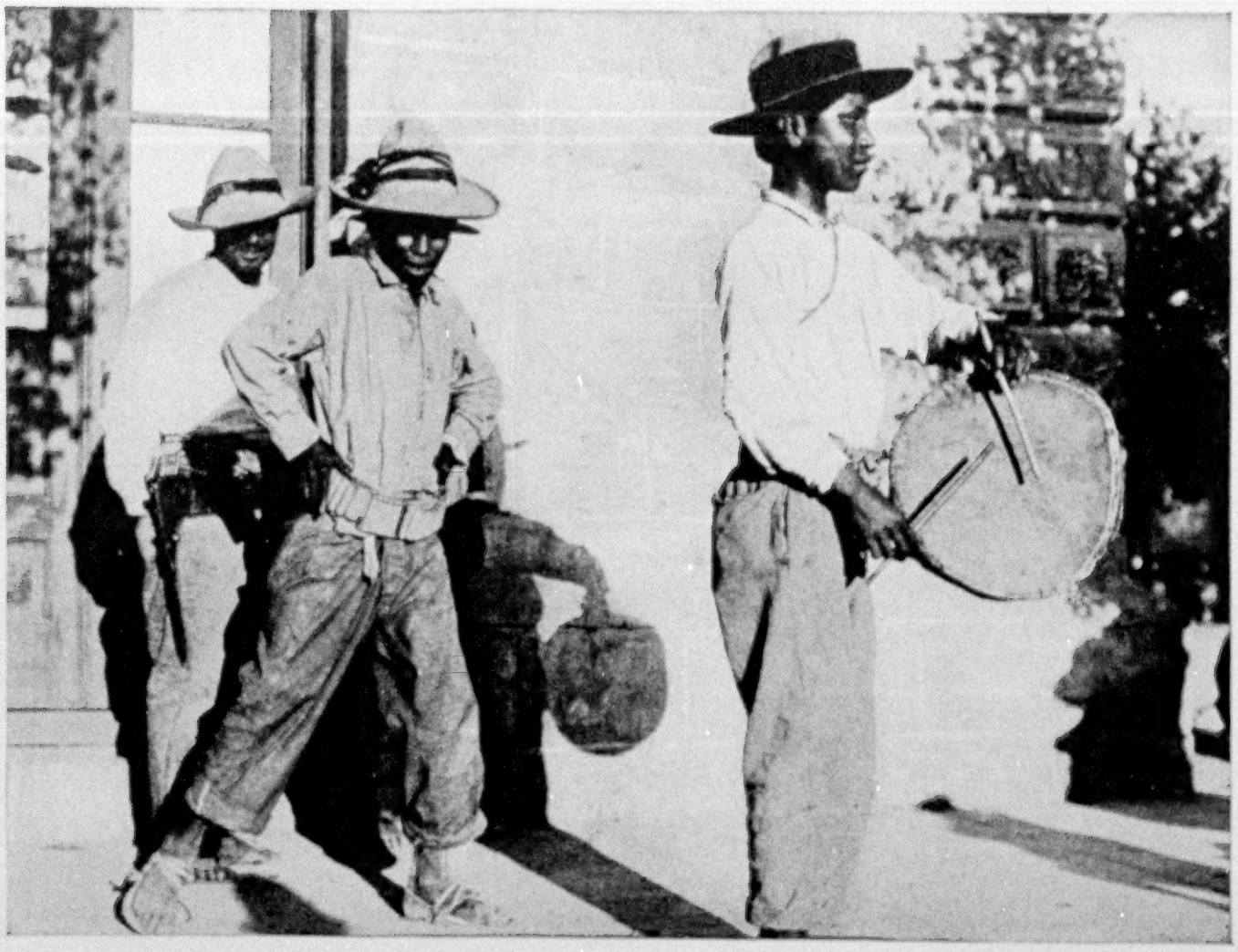
POVERTY AND DEGRADATION UNEXAMPLED

Years ago these Indians inhabited a part of the Sonora coast and went trading to Hermosillo and Guaymas. But their thieving, lawless habits kept them so much in conflict with the Mexican authorities that eventually they were driven back to Tiburon Island.

For some months previous to our visit the Indians had not been to the mainland, by reason of a little affair wherein the tribe had murdered certain Mexican fishermen from Guaymas and burned their boat.

Their poverty and degradation are perhaps the most absolute among human beings anywhere. No housekeeping, no gardens, no animals, no fowls to care for, no tools—just to fish, to kill a deer or a burro, or spear a turtle! (While we were with them bucks brought in a deer; it was eaten raw.)

They had no utensils at all except clay *ollas*. One old squaw, ignoring us utterly, went on with her work making an



Photograph by Dane Coolidge

YAQUI BOY SOLDIERS AND THEIR SIGNAL DRUM OF DRIED DEERSKIN

olla. She would take a ball of red mud (brought from the high part of the island), roll it between her palms into a rope-like shape, then build onto the growing vessel. Finally, she would wet the clay strips in her mouth and shape the vessel with her hands and a clam-shell.

Mongrel dogs, lean and shivering, skulked about, nosing into an *olla* of chopped deer meat, from which women and children were also eating.

"How many dogs have you?" I asked of the Chief.

"I don't know; I can't count," he said.

He made the same answer when I asked him how many Seris there were. I judge, however, that there are not more than 200 Indians on the island.

THE MAGIC OF BRASS BUTTONS EVEN ON TIBURON

These Indians have practically nothing to trade; all they offered us were a few small pearls, deerskins, abalone shells, and one or two crude but water-tight baskets.

One of our party offered small coins to a little girl to induce her to pose for a picture. She ran away. A tender of the money to her mother made no impression; but a few bright brass buttons (yes! even on Tiburon!) cut from the uniform of a petty officer closed the transaction.

Such rags as the Seris wear they secure from time to time from stray fishermen or hunters who go up the Gulf and call out of curiosity at Tiburon.

Incredible as it sounds, these people were subsisting wholly on fish, bird eggs, and meat. The Chief begged us for flour and sugar, saying they had had none for months.

Certain Yaqui outlaws once fled to Tiburon. Governor Izabel, of Sonora, sent word to the Seris, offering a reward for the capture of the Yaquis.

"Bring them in with their hands tied," the messenger told the Seris in sign language.

Perhaps the sign was misunderstood; anyway, what the Seris brought in were

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Photograph from Frederick Simpich

A VIOLIN VIRTUOSO OF TIBURON

The instrument of this fiddling Seri—a square of dried hide, a notched stick, played with a dried-reed bow—is primitive. But the music? "Ah, SOME jazz," pronounced the syncopation expert of the party, a negro sailor from the "States."

the hands of the Yaquis, cut off and tied on a pole!

Mexican observers say there is no marriage among the Seris; that they simply mate. There are no priests nor medicine men, though many Seri babies in years past were taken to Hermosillo for baptism in the churches there. To mourn, they cut off their hair and paint their faces black. They place their dead in mesquite brush and dry them.

When I got back to Guaymas, I learned from government records there that Juan Tomas' real name is "Coyote-Iguana," and that he is not a Seri at all. Years ago Seris captured a Spanish girl as she was traveling from Guaymas to Hermosillo, and took her to Tiburon. At that time the island chief was a stalwart Papago, who had also been kidnaped as a child. His vigor and shrewdness eventually enabled him to become ruler of the Seris, and he took the Spanish girl as his mate. The present chief, Juan Tomas, is the child of this couple.

Years ago a Mexican punitive expedition went to Tiburon, and while there offered to take the Spanish woman back to her people in Guaymas; but she refused to quit Tiburon. The Seris had tattooed her face; she was one of them.

PENINSULAR CALIFORNIA

The long, boot-shaped peninsula that swings down off the left-hand corner of the United States belongs to Mexico and is known on Mexican maps as "Baja," or Lower California. Early Spanish maps of America showed California as an island, due, no doubt, to limited explorations of this peninsula.

Scantly known as it is to the average American, this 800-mile-long strip of rocks, peaks, brush-grown mesas, and rare, fertile little valleys is a favorite

haunt for many Yankee naturalists,* fishermen, and big-game hunters; and here and there, in the more favored, well-watered, grassy spots of the higher ranges, hardy American cattlemen have built their adobe homes, where they enjoy the limitless freedom of vast unfenced areas. The Circle Bar Company at *Ojos Negros* Ranch runs cattle over a leased territory of two and a half million acres, and a British corporation holds title to something like fifteen million acres!

Away down at peaceful, picturesque La Paz, where Cortez repaired his schooners and where, centuries later, Walker, the Yankee filibuster, raised his flag, another Yankee today runs a busy little tannery, turning out 600 sides of good leather every day, for an American shoe factory. Here and there, in hill and valley, Americans are delving for metals or growing the staple *frijole*.

But the country as a whole, owing to its many desert, waterless areas, is but sparsely settled, and, as one writer says, "In all its turbulent, romantic history, since the halcyon days when Sir Francis Drake dropped his pirate anchor in Magdalena Bay, no wheeled vehicle has traversed its rough and tortuous length."

Rich as are its mines and fat as are its herds of cattle, its chief source of wealth lies in the cotton-growing regions around Mexicali.

A DIFFICULT BORDER PROBLEM

At the Colorado delta, more than at any other point on the whole border, the interests of the United States and of Mexico are closely joined. This is due to the singular topography of that region (part of it is below sea-level) and to the diversion of water from the Colorado River. In the opinion of many irrigation engineers and political students, this peculiarly delicate problem of irrigation water rights, as between planters on the American and Mexican sides of the line, respectively, can be solved satisfactorily only by some joint treaty between the two republics, involving either the fixing of a neutral zone or the sale of a small strip of territory.

Years ago private American interests built an irrigation ditch, taking water from the Colorado River near Yuma to irrigate the Imperial Valley in California. To avoid the difficulty and cost of cutting through the shifting sand dunes west of Yuma, the ditch, following a line of easier resistance, was carried south over the border into Mexico, thence west for some 60 miles, and finally north again into California. Here the famous Imperial Valley, which now boasts a population of 65,000 and farms worth a hundred millions, was developed, the waste water running down into the Salton Sea, 260 feet below sea-level.

In return for the privilege of carrying this main canal over Mexican soil, the original promoters agreed to allow 50 per cent of its flow to be used in irrigating land on the Mexican side, where a great cotton-growing region, owned almost wholly by American colonists, has recently been developed. (In 1918 its crop was worth nearly ten millions.)

THE FATE OF A WONDERFULLY FERTILE VALLEY IS AT STAKE

Because of the international meanderings of this canal, it is easy to see that water rights are sometimes in conflict, and also that the farmers in California are uneasy, day and night, lest some harm come to the Mexican section of the ditch.

If this life-giving canal should be cut or destroyed by some force in Mexico, the vast Imperial Valley would dry up and quickly revert to desert, just as happened so long ago when Ghengiz Khan cut the canal above Bagdad and transformed the "sea of verdure" that Herodotus saw into the wind-blown mounds and sand-filled laterals that mark the modern plain of ruined Babylonia.

It is clear, then, why the governments of both republics are so concerned in safeguarding the international ditch.

And as yet, notwithstanding its present great prosperity, the real development of this amazingly rich Mexican region has barely begun. South of the so-called "mud volcanoes," east of the Laguna Salada and along the Hardy River, there stretches a vast, tule-grown area, flat as a billiard table and rich as the valley of the Nile, built up through age-long silt deposits from Arizona, Colorado, and

* See also, in THE NATIONAL GEOGRAPHIC MAGAZINE for May, 1911, "A Land of Drought and Desert," by E. W. Nelson.

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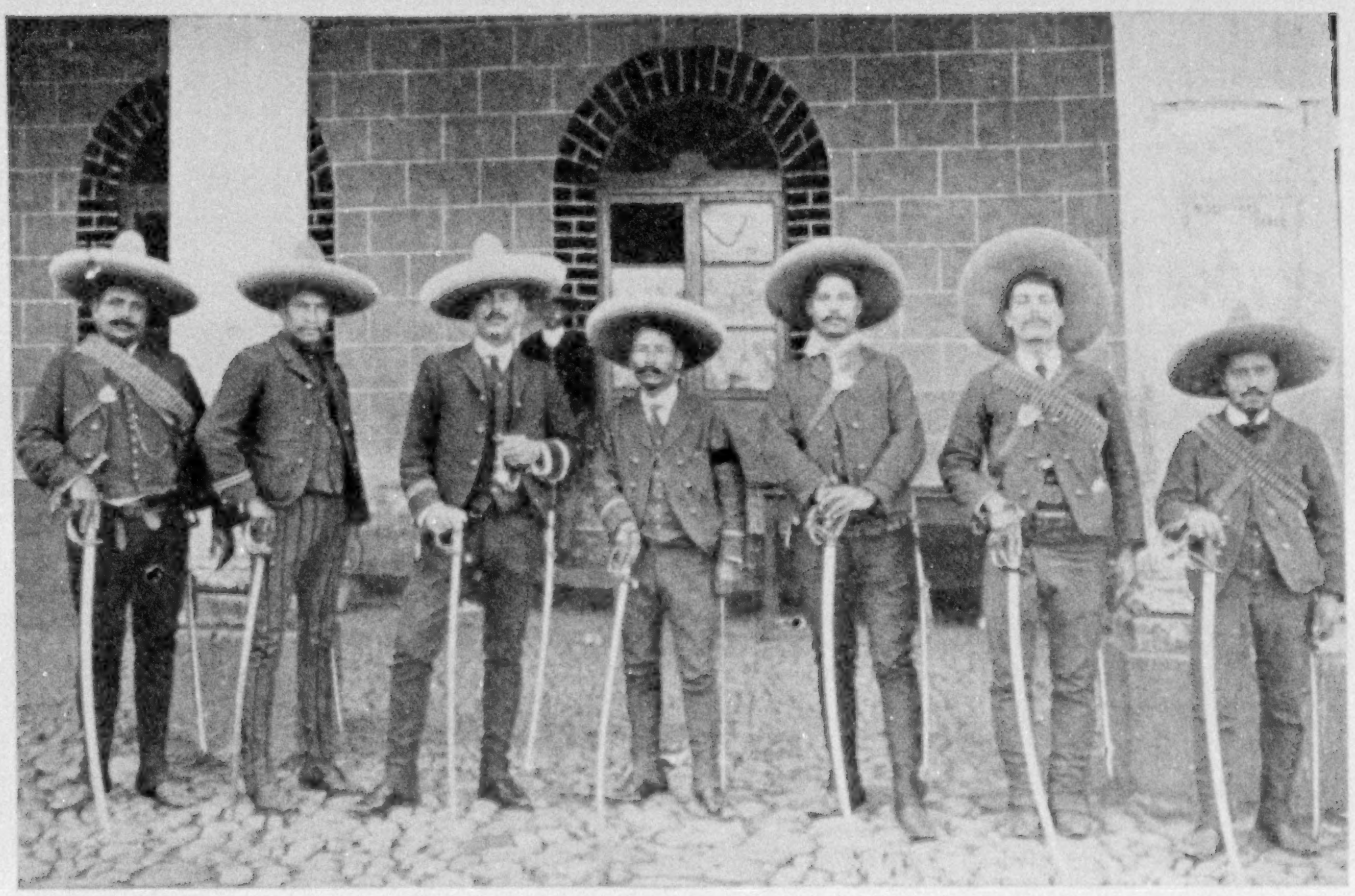
Photograph from Frederick Simpich

A GROUP OF MEXICAN CHILDREN, AFTER THE CEREMONY OF BAPTISM

In few places are children so numerous, so loved, and so well cared for, according to their parents' lights, as among the peons of Mexico.



© Hugo Brehme

MEXICAN RURALES OF THE OLD RÉGIME

Mexico, synonym of disorder in recent months, under President Diaz had one of the most efficient State police organizations in the world—the rural guards—who made the Republic entirely safe for the traveler. There is a tradition that Comonfort founded the organization on the theory of setting a bandit to catch a bandit, and formed from the outlaws themselves the nucleus of this body, which, under what has been called the "military Diazpotism," operated like the Canadian mounted police and the Pennsylvania State constabulary.

Utah, and embracing perhaps a quarter of a million acres. If pioneering and settlement proceeds at the same rate for the next ten years as in the past decade, this part of Mexico will become the richest and most productive in the whole republic.

NO PERMANENT JAPANESE SETTLEMENT IN LOWER CALIFORNIA

Japanese immigrants, numbering eight or nine hundred and mostly of the coolie class, have settled here in the past five years. Nearly all of these Japanese, as well as some 2,000 Chinese, work in the cotton fields about Mexicali. A few of both races have leased various small tracts of land and are growing cotton and other crops on their own account; *but not an acre of land* in all Lower California *is known to have been purchased by either a Japanese or a Chinaman.*

Contrary to common report, too, only a very few Japanese—not over 50 at any one time—are operating around Magdalena or Turtle Bay, on the Pacific coast of the peninsula. Most of these are employed by the Masahara Kondo Company, a Japanese concern that supplies fresh Mexican fish to California markets and ships dried abalone meat to Japan.

The Kondo Company has a concession from the Mexican Government for taking sea foods and whales, building drying sheds, wharves, etc., covering practically the whole west coast of Mexico; but so far it has operated on a very small scale, using only a few power boats built or bought at San Diego, Calif., and erecting drying trays at Turtle Bay.

There is no permanent Japanese settlement anywhere on either coast of the peninsula.

A MINING TOWN OWNED BY HOLLAND'S QUEEN

From hot, lonely, isolate Santa Rosalia, where Queen Wilhelmina of Holland and the Paris Rothschilds own the famous Boleo Mine, millions of dollars in copper matte are shipped each year. (Next to cotton, copper is Lower California's chief export.)

Rosalia is an odd, privately-owned, made-to-order city of some 12,000 troubled souls. Life there is depressing. As men are needed in the mines in larger or smaller numbers, they are imported or exported at the will of the French company on its own steamers.

The company owns everything, including the houses, stores, schools, playgrounds, markets, movie shows, the million-dollar breakwater, and all. Even the steel church was made to order in France, shipped around the Horn like a piece of knock-down Michigan furniture, and set up at Rosalia.

The country for miles about is treeless, empty, and hot. Every necessity of life, except fish, is imported. Were it not for the rich copper in the blistering, hostile hills, no sane human being would linger long on this inhospitable coast.

THE MAGNIFICENT HARBOR OF MAGDALENA BAY

Magdalena Bay, although the finest harbor between Panama and the Golden Gate, is a lonely and empty spot. Save for a few petty customs officials quartered in a small group of weather-beaten wooden houses on the margin of the bay, the region hereabout is practically uninhabited. Some forty years ago an ill-advised colonizing boom brought a few hundred misguided American settlers to the Magdalena Bay country; but the enterprise failed because of scarcity of fresh water, and the settlers escaped only through the aid of one of our navy vessels. The region has certain possibilities, but it is no place for a tenderfoot.

From San Xavier and ruined Tumacacíri, in Arizona, all the way down to Guadalajara there marches a line of stately old churches, which marked the northern advance of the cross. Significantly, too, these padres always chose to build near ample water and rich soil. Traces of their old irrigation ditches, showing that they grew their own grain and fruit, are plainly discernible. There were cisterns, also, and loop-holed compounds for Indian defense in the days of the Church Militant.

Even as late as 1879 Apaches attacked the town of Imuris, in Sonora, and some of the people took refuge in the old church of San Ignacio, near there. Its

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Photograph from Frederick Simpich

DIGGING FOR WATER IN LOWER CALIFORNIA

The long, boot-shaped peninsula has vast desert areas and ranges of barren hills which lie beneath a blistering sun, but there are also numerous fertile valleys which are the haunts of naturalists and big-game hunters. Here, also, hardy cattlemen prosper, their herds grazing over extensive unfenced pasture lands. The enormous mineral resources of the peninsula are as yet largely undeveloped, but perhaps its source of greatest potential wealth lies in its cotton-growing regions near the California border.

scarred walls still show plainly where Apache bullets bit angrily at the thick adobe.

In the old church at Caborca an American filibustering party led by one William Krebs, bound by a fantastic oath to "free" Sonora, was shot to death.

OUR COMMUNITY OF INTEREST

Far up in the wild Sinaloa hills are crude, tiny chapels, built by hermit priests. I met one old padre who had not been outside these hills for twenty years. He told strange tales of the hill folk and their primitive life. One Indian had lost a mule. He prayed that he might find it—and did, but it had broken its leg. To show his thanks, the Indian made a votive offering at the chapel, a tiny mule wrought from silver. But before bestowing his offering he broke a leg off the silver mule to balance the account.

Such is the story today of this awakening region whose commercial future is so peculiarly tied up with that of our own Pacific coast. The purchasing power of its natural products is enormous. Even now, in spite of the waste and hazard of revolution, we buy from it each year millions of dollars' worth of ore, bullion, hides, cattle, garvanzos, fiber, and hardwood; and nearly everything it uses from abroad it buys from us.

Inevitably, when normal conditions prevail, its development will proceed along the same lines, and perhaps even obtain the same final prominence, agriculturally at least, as our own State of California.

WILD DUCKS AS WINTER GUESTS IN A CITY PARK*

By Joseph Dixon

A Contribution from the Museum of Vertebrate Zoölogy of the University of California

THE wild ducks which winter at Lake Merritt, in the city of Oakland, Calif., afford a most striking example of the value which wild life may have to a community. The sane and efficient method here used to attract and safeguard the ducks has resulted not only in the preservation of the bird life involved, but also in making available for observation and enjoyment a peculiarly attractive display to a multitude of people.

Moreover, the methods employed have been thoroughly in accord with the growing democratic sentiment in America to the effect that our native wild life and game belong to the people as a whole and not to any one section.

Lake Merritt is a V-shaped body of salt water, covering somewhat less than a square mile, almost in the center of Oakland. It is the oldest State game reservation in California, having been established by the Legislature in 1869. The attractions offered wild ducks at Lake Merritt, in estimated order of importance, are: sanctuary, food, drink, suitable loafing grounds.

A large section at the east end of the lake is set off by a log boom, and boating is forbidden thereon during the winter months. Dogs not in leash are forbidden in the city park adjoining the lake, for there the ducks come out on the lawn and are fed daily at 10 o'clock. Of course, no shooting is ever allowed.

THE DAILY BOARD BILL OF A DUCK

The city, through its Board of Park Commissioners, provides food and water for the ducks. During the past winter (1918-19) feeding was not begun until the armistice was signed; thereafter four tons of whole barley were fed to the ducks in the Oakland city parks in 77 days at a total cost of $397.23, or at an average cost of $5.16 per day. The usual feeding period is about 100 days, and the average cost each year about $400.

If we figure on the presence of 2,500 ducks, the amount of barley consumed each day by each bird would be little over one-half ounce, and the cost per bird per day about one-fifth of a cent. Of course, the ducks depend in major part upon natural sources of food.

Several shallow cement drinking basins are maintained on the lake shore, and these are kept full of fresh water, being regulated by automatic cut-offs. The drinking basins are very popular with the river ducks, such as the Pintail and Baldpate, but are rarely visited by the Canvasback and other sea ducks.

TWO CLASSES OF WILD FOWL ARE ENTERTAINED

The wild fowl at Lake Merritt may be divided into two classes, those which come out and loaf on the lawn and those which remain on the lake. The river ducks, such as the Pintail, Baldpate, and Shoveler, as well as numerous coots and gulls, spend considerable time when undisturbed in sleeping and basking in the sunshine on the lawn.

On the other hand, the sea ducks, Canvasback, Scaup, Bufflehead, Goldeneye, and Ruddy (all characterized by having a vertical flap on the hind toe), prefer the open waters of the lake, along with the various diving birds, such as the Eared and Pied-billed grebes. The shore line is attractive to the Killdeer, that most ubiquitous of American wading birds.

The ducks begin to arrive about October of each year, and they scatter again at the close of the shooting season, Feb-

*For a detailed account of the various species of wild ducks, see Henry W. Henshaw's "American Game Birds," in "The Book of Birds," illustrated in natural colors, with 250 paintings by Louis Agassiz Fuertes. Published by the National Geographic Society.

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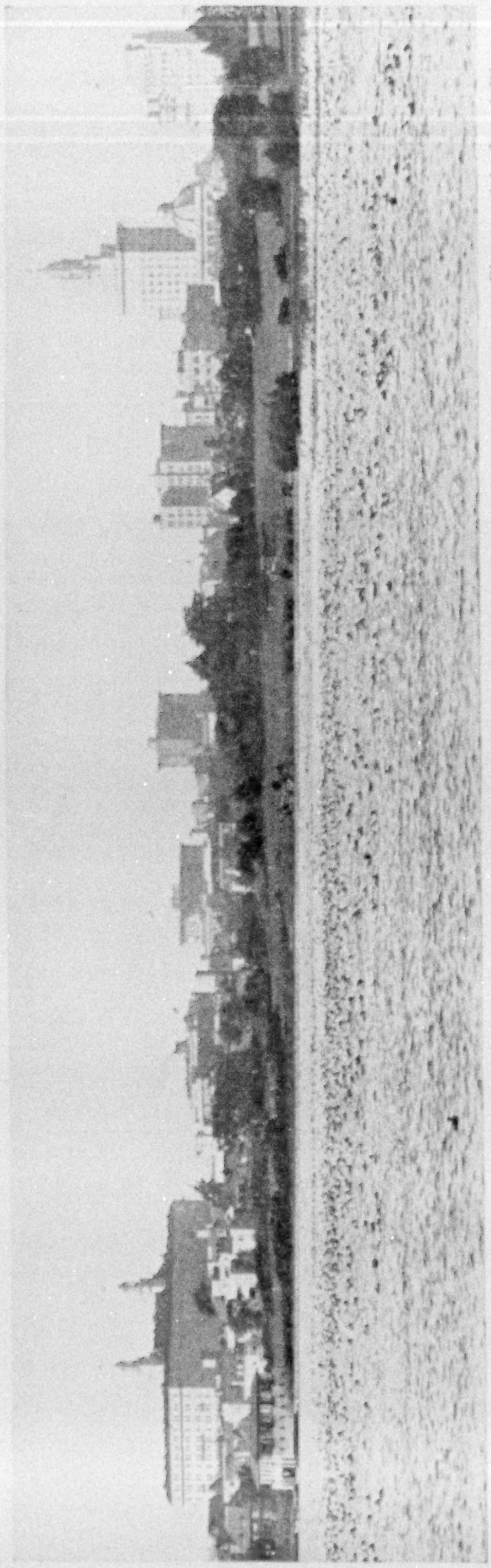

Photograph by Joseph Dixon

WILD DUCKS AS WINTER GUESTS OF THE CITY OF OAKLAND

The hundreds of ducks shown are nearly all Canvasbacks, the most famous of our American wild ducks. There is no record of the nesting of this species of duck within the State of California; it breeds from Oregon, Nevada, and Dakota northward. The birds which winter in California do not belong to the people of California alone. It is becoming an axiom in the United States and Canada that migratory game birds do not belong to the people of any one section alone, but to all the sections the birds traverse during their annual pilgrimage.

ruary 15. After this date they are protected from shooting throughout the State and need no longer seek refuge in this sanctuary. Thus the ducks leave Lake Merritt several weeks before they depart for their distant nesting grounds in the north.

The time of arrival and departure varies with the different species. For instance, the Pintail arrives much earlier in the fall than the Canvasback, and also departs correspondingly early in the spring. In 1918 the Canvasback did not arrive in full force until early December, some time after the Pintail had arrived. On February 16, 1919, only one Pintail was seen on the lake where thousands were present a month earlier. At this date (February 16), when only one Pintail was noted, hundreds of Canvasbacks still thronged the waters near the Embarcadero, and many individuals of this species were still present during the first week in March.

Among the various kinds of waterfowl which regularly visit Lake Merritt each winter, the following four species of wild ducks occur in greatest numbers and are of particular interest:

The Pintail, or Sprig, one of the largest and most graceful of all our wild ducks, is the species found on the lawns in greatest aggregate numbers. Both the common name, Pintail, and the scientific name, *acuta*, have been given this bird on account of the long, rapier-like tail feathers, which form the most striking feature in the male of the species.

Photograph by Joseph Dixon

PINTAILS ASLEEP, OBLIVIOUS TO THEIR CITY SURROUNDINGS

Most city folk would be much surprised to wake up in the morning and find their front lawn covered with wild ducks. Scenes such as this are frequent in the fashionable residence district about Lake Merritt. The birds here are very much at home and seem to know that they are in a veritable "city of refuge," as far as ducks are concerned. Note that Pintails sleep lying down instead of standing on one leg, as is the case with Shovelers.

In addition to this character, the male may be recognized in the field by having a pure white belly and breast, from which a conspicuous white stripe extends up along each side of the neck, almost meeting its fellow at the back of the head, but separating the dark-brown head and chin from the black hind neck.

The female is smaller than the male and has a dingy instead of a pure white breast. The top of the head and the sides of the neck are brown streaked with black. The feathers of the sides and back are brown with whitish margins.

NORTH AMERICA'S MOST FAMOUS WILD DUCK

When shot at on the hunting grounds, the Pintails soon become exceedingly shy and wary. Showing far more intelligence than the Canvasback, they often refuse to come within gun range of the decoys. Yet these same birds are the ones which respond most readily to the man-made opportunity to secure rest, food, and freedom from enemies at Lake Merritt.

The Canvasback, North America's most famous wild duck, is the species occurring second in abundance at Lake Merritt. During the winter of 1918-19 there were nearly 50 per cent more "Cans" present on the lake than there were the previous winter, so that this season the number of Canvasbacks and Pintails was nearly equal. The whitish, canvas-colored back of the male is the character which gives this duck its common name.

Canvasbacks obtain their food by diving, and make little effort to secure food which floats on the surface of the water. When fed grain, they wait until it sinks to the bottom and then dive for it. When about to pick up barley in four or five feet of water, the neck is arched; then the bird springs clear out of the water and goes under with a little splash, spreading its stubby black tail and paddling vigorously with both feet meanwhile. Eight or ten birds out of a flock

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Photograph by Joseph Dixon

CANVASBACKS, PINTAILS, AND BALDPATES ON LAKE MERRITT, OAKLAND, DURING A FOGGY MORNING

Some idea of the number of wild ducks which winter on Lake Merritt may be had from the above illustration, which represents only a portion, about 1,500, of the total number. On December 28, 1918, there were 5,000 wild ducks on the lake and adjacent lawns. At this date Pintails and Canvasbacks constituted two-thirds of the total number. The number of Canvasbacks this year was at least 50 per cent greater than it was in the preceding year. The above figures are based on actual counts by various persons and are not mere guesses.

Note the long, slightly up-curved tail of the Pintail (lower left margin of picture) and the sharp, stubby, tipped-up tail of the Baldpate (lower center). The Canvasback (lower right) shows no tail at all to speak of.

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Photograph by Joseph Dixon

A FEW OF THE DUCKS WHICH WINTER ON LAKE MERRITT

Just as this picture was snapped a man, passing by, paused and remarked with a tone of finality: "There are a thousand pounds of meat there." The *meat* was evidently all he saw. A gentleman overhearing the remark said: "It would be just plain murder to shoot into a flock like that." Later, a boy, passing by, said to his chum: "Gee! wouldn't it be great to get a shot into a bunch like that?" But his chum showed that he was a true sportsman when he replied: "No! it would be too easy." The ducks in the foreground are nearly all Pintails. The dark-colored, bobtailed birds in the foreground are Coots, commonly known as Mud-hens.

Photograph by Joseph Dixon

DUCKS, COOTS, AND GULLS AT A DRINKING BASIN

Providing drinking basins for wild ducks may smack of "carrying coals to Newcastle"; yet the fresh water in these shallow cement basins is one of the most potent attractions offered the fresh water or river ducks at Lake Merritt, which is salt. The Canvasbacks and other "sea ducks" are rarely seen to visit the drinking basins, seemingly content with the salty, tidal water of the lake.

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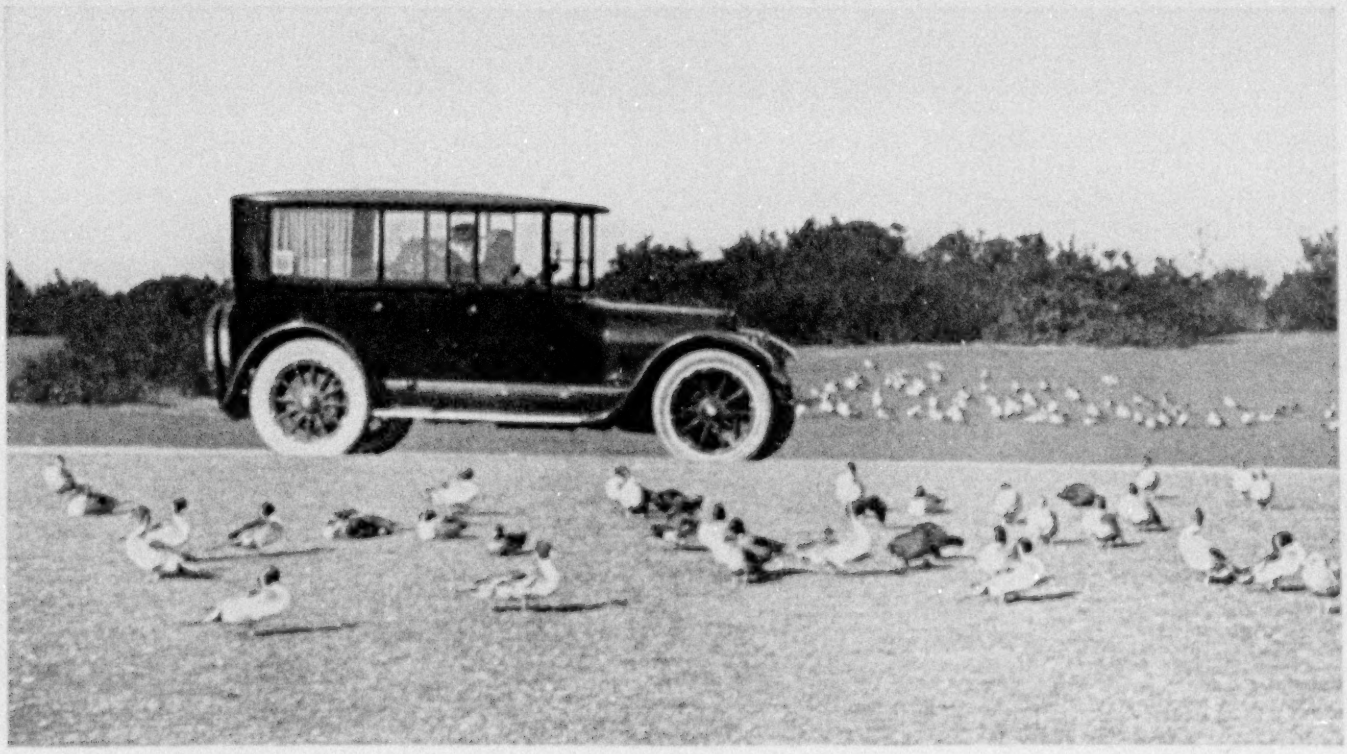
Photographs by Bowman Drug Co., Oakland

TWO PANORAMIC VIEWS OF WILD DUCKS AT LAKE MERRITT

These two photographs, taken several years ago, are of historical interest, since they afford a reliable basis for comparing the numbers of ducks present then and now. They bear out the assertion that Lake Merritt is becoming increasingly popular with the ducks as the years go by. The upper photograph is the earlier of the two and gives a good idea of the lay of the land. The lower photograph shows the method of feeding the ducks by scattering whole barley broadcast. Two photographers and several auto loads of interested spectators are taking advantage of the opportunity to study wild ducks at close range.

FIRST CALL FOR DINNER

In midwinter the ducks are fed daily at 10 o'clock. The moment the waiting birds catch sight of their approaching meal there is a wild scramble in the direction of the caretaker. The latter encourages the newly arrived and timid ducks to come ashore by cleverly imitating the mellow whistle of the Pintail. Many of the ducks fly in from the lake and alight on the lawn where the barley is being scattered broadcast. The ever-ready Mud-hens can be seen, at the lower margin of the photograph, making frantic efforts to "get there first."



Photographs by Joseph Dixon

WILD DUCKS SOON GROW ACCUSTOMED TO CITY LIFE

At Lake Merritt the ducks have little fear of the many autos which pass hourly. When an auto approaches the ducks waddle off the pavement, and when a few feet distant often turn around, settle down, and go to sleep, as illustrated by the three Pintails in the middle foreground. Many autoists take advantage of the unusual opportunity thus afforded to watch the ducks at close range. This tameness of the ducks has increased people's appreciation of the value of living birds and of native wild life in general.

frequently dive in unison, with almost military precision.

When feeding under conditions just described, the ducks remain under the water from 10 to 30 seconds. They are apparently able to see well under water. Whole barley and rice are the two grains most relished. The Canvasbacks prefer the open waters of the lake, rarely going out on the lawns, although they regularly spend considerable time on the mud flats at the margin of the lake, sunning themselves, preening their feathers, and sleeping or resting.

THE DISTINGUISHING MARKS OF THE CANVASBACK

In the field, the low sloping forehead is, in both sexes, the best distinguishing mark of this species. If a straight line were drawn from the top of the head to the tip of the bill, it would almost touch the top of the bill and the forehead for the entire distance. The male bird is characterized by having a white back, a reddish-brown neck entirely surrounded at the base by a broad black collar, and a black tail and rump patch, which latter, when the bird is resting on the water, is not completely covered by the white feathers of the back. The bright carmine eye of the male is readily visible at a distance of 20 feet in good light.

The female Canvasback lacks the contrasting black and white coloring of the male and has a brownish, moth-eaten appearance. The most conspicuous feature of the female, aside from the low sloping forehead, is a whitish, comet-shaped streak behind the eye.

THE BALDPATES HATE TO HAVE THEIR PICTURES TAKEN

The Baldpate or Widgeon is the species third in abundance at Lake Merritt. This duck receives its name from the broad streak of white which, in the male, extends from the forehead over the top of the head. A wide streak of metallic green is also to be seen behind the eye. The female lacks these two characters, but both sexes may be recognized, even in flight, by the small, short bill and by the white belly, which contrasts with the pinkish brown sides and breast.

When resting on the water, Baldpates may be recognized by their sharp but stubby tails, which stick upward at a much sharper angle than does the tail of the Pintail. While mingling freely among the Pintails even in flight, the Baldpates have been the most difficult of all the ducks to photograph at close range. It is hard to get them off by themselves, and when separated they usually manage to keep one or more Pintails between themselves and the photographer.

Aside from its peculiar spoon-shaped bill, which is the reason for its common names, the Shoveler, or Spoon-bill, is one of the most beautiful ducks in the United States. The bright-green head and neck, white breast, rich cinnamon underparts, and orange red feet and legs make up the brilliant color scheme of the male. In this bird one of the best field characters is to be found in the large white spot on each side, at the base of the tail. The female has the same peculiar bill as the male, but lacks his bright coloring.

THE BENEFITS DERIVED FROM THE SANCTUARY

As will be seen from the photographs, the female Shoveler has a distinctly mottled appearance, because of the brown feathers on the back, breast, and sides being widely margined with ashy. In flight, both sexes may be recognized by the spoon-shaped bill, chunky head, short neck, and diamond-shaped tail.

The Shovelers occupy a certain central portion of the lawn, to which they are very partial. Here they congregate in long, strung-out flocks, all the birds headed in one general direction, and doze in the sunshine. Each bird stands on one leg with its bill tucked away among the feathers of its back.

To the city man or woman, often engaged in a sedentary occupation, the recreational value of wild ducks is of far greater importance than any monetary value. To these people, the hours of relaxation spent at suitable intervals during the winter, in the sunshine and open air of the park, observing and enjoying the blending colors and graceful movements of the ducks, may often be of very considerable importance in maintaining personal health and mental vigor.

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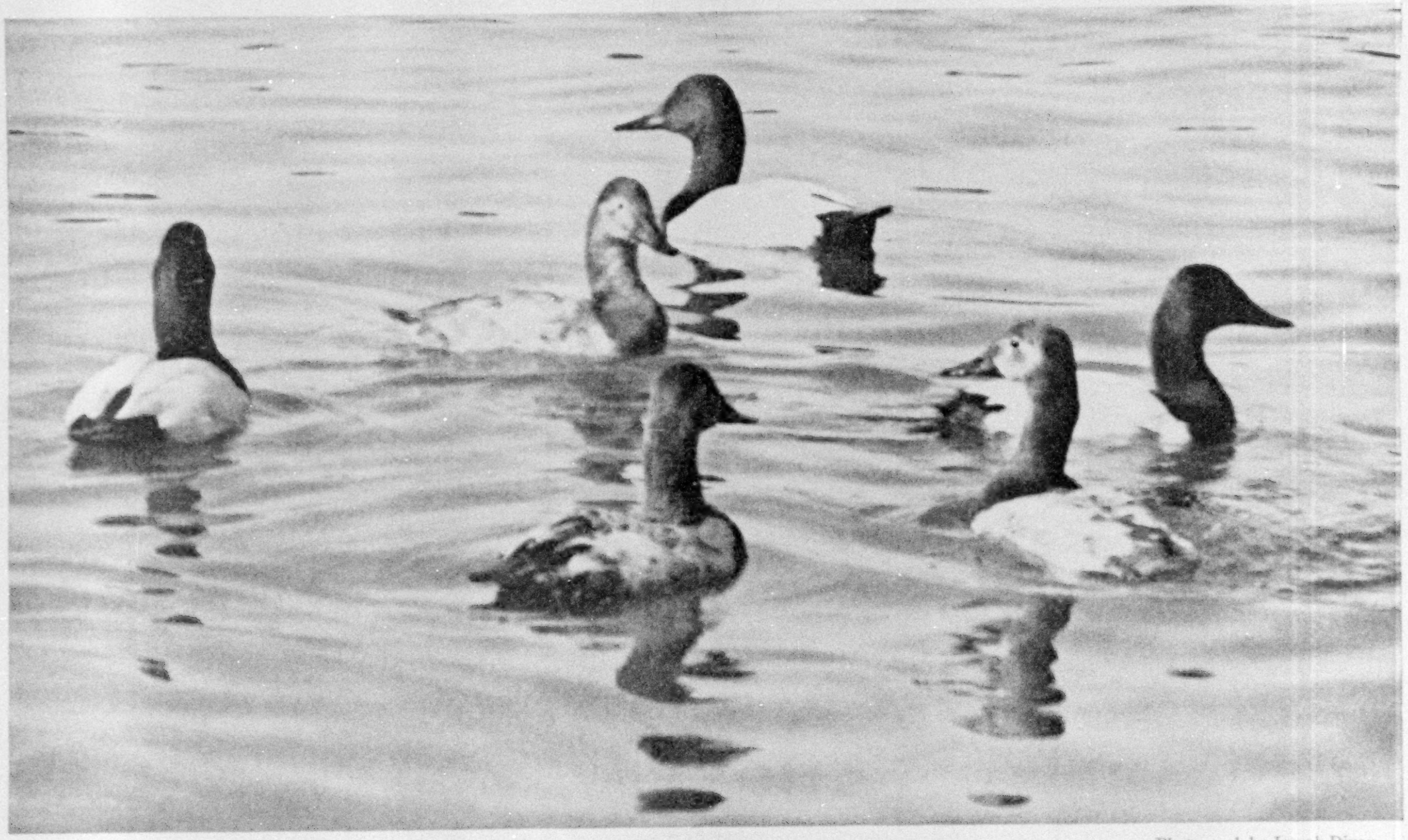

Photograph by Joseph Dixon

THREE BRACE OF CANVASBACKS

In both sexes the low sloping forehead is the best distinguishing mark of the Canvasback Duck. In the first two birds on the right, for example, note that if a straight line were drawn from the top of the head to the tip of the bill, this line would almost touch the top of the bill and forehead for the entire distance. The whitish, canvas-colored back of the male is the character which has given the species its name. The "Cans" prefer the open water of the lake. They frequently come ashore to dry and preen their feathers, but they rarely go far from the edge of the water. The reddish brown neck and the head of the male bird are rendered photographically almost black. The bright carmine iris of the eye, which is plainly visible at 20 feet, also comes out dark.

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Photograph by Joseph Dixon

DUCKS FLEEING TO THE LAKE WHEN FRIGHTENED BY A DOG

The sportsman, to whom "the outing in the open is the thing, not the amount of blood-stained feathers in the bag," will find abundant opportunity at Lake Merritt to match his skill against the speed of wild ducks if he will substitute a speedy shutter and lens for his shotgun, and fast plates for shells. Some one may say that this is too easy to be interesting; but just let him try to get that flock of Pintails "slanting in" on set wings, or to "stop" a male Pintail as he "climbs" skyward. The chances are that such a photographer-hunter will, with undiminished pleasure, soon be using the camera more, and the shotgun less.

Even the hunter should realize that the present tendency toward curtailment of his shooting activities will result in ultimate benefit even to himself. We cannot expect long to maintain any adequate supply of wild ducks if we continue to levy on the breeding stock by shooting more birds each year than there are birds hatched and reared in that year. No business man expects to continue drawing checks against his bank account unless he continues to make deposits in favor of that account.

At Lake Merritt abundant opportunity is still afforded the true sportsman who wishes to match his skill against the speed of flying birds. If "the outing in the open is the thing, and not the amount of blood-stained feathers in the bag," then by substituting a speedy shutter and lens for his gun, and fast plates for shells, he may "pull trigger" to his heart's content without destroying creatures which are more useful alive than dead, or depriving his fellow-citizen of something which is common property.

CURIOUS AND CHARACTERISTIC CUSTOMS OF CENTRAL AFRICAN TRIBES*

By E. Torday

Member of the Council of the Royal Anthropological Institute, Member of the Council of the Folk Lore Society, etc.

With Photographs by the Author

DURING my seven years of travel in the African wilds I have encountered few peoples possessing stranger customs and presenting more curious contrasts than the Bambala tribe, who reside in numerous village communities on the banks of the Kwilu River, a southern tributary of the Congo.

Each village is under its own chief, who holds the position by virtue of his wealth and is succeeded at his death by the next richest man of the tribe. His principal function is to act as money-lender to his subjects. No tribute is paid to the chief, but he has a right to the ribs of every human being killed for food and to the hind legs of each animal killed during the great hunts. If a chief is young enough, he acts as leader in war; otherwise one of his sons takes his place.

Intermediate between the chief and the ordinary freemen is an hereditary class called *muri*, who may not eat human flesh nor yet the meat of fowls. They are distinguished by an iron bracelet and a special head-covering of cloth, which may not be removed by any one under penalty of death, even if the offender did not intend to touch it.

The bracelet of a *muri* passes at death to the nephew (sister's son), who succeeds to the dignity, and the heir must steal the skull of his uncle. The corpse is buried for some two months, then the skull is exhumed, painted red, and placed in the house its owner used to occupy. The nephew must gain possession of it at night without being observed, and, after hiding it for a few days in the bush, take it home to his hut.

If a *muri* is killed in war, his bracelet is sent home, but the skull has to be stolen as before from the hostile village. The chief privilege of a member of this class is the right to a portion of each animal killed in hunting.

POISON TO PROVE THE JUSTICE OF ONE'S CAUSE

In disputes, where two people of the same village are concerned, a poison ordeal is employed as judge. Whether a man is accused of witchcraft, parricide, or of some minor offense, he declares

*This article, revised and edited, is based upon the author's "Camp and Tramp in African Wilds," a record of adventure, published by the J. B. Lippincott Company, Philadelphia.

FOUR TYPES OF NATIVES IN CENTRAL AFRICA

At the top and to the left is a Moyanzi youth with highly raised scars, tribal marks, on the cheeks. To his right is one of the Bakwese, essentially a tribe of warriors. They are never found without having at least a knife sticking in the bands they wear as ornaments round their arms, and they are always ready to use any weapon at hand. Below, at the left, is a northern Bambala native whose hair-dress differs considerably from that of his southern Bambala neighbor to the right. When freshly arranged the latter looks like a "toque." The southern Bambala let their hair grow to a considerable length, removing only three or five longitudinal lines with the razor. The remaining hair is plaited into ridges, and to give it an appearance of greater length palm fibers are frequently plaited into the ends. Small nails with gilt tops are stuck into the ridges.

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CICATRICES AS TRIBAL MARKS IN CENTRAL AFRICA

This style of embossed flesh known as cicatrization usually shows to what tribe a man belongs. Often it is a more reliable guide than language; for while language may undergo changes caused by a new environment, Congo peoples stick faithfully to their tribal marks. The concentric circles on the back are characteristic of the Mongo tribes.

himself willing to take poison to prove his innocence.

The poison, which is derived from the bark of a native tree (*Erythrophlæum guineense*), is usually ground fine and mixed to a thick paste, from which are made five small loaves, and these are administered one after the other to the defendant. During the next fifteen minutes, if it is a case of witchcraft, the bystanders call on Moloki (the evil principle) to come out.

The poison usually acts very quickly; it may kill the accused or cause purging or vomiting. The last-named effect alone is regarded as a proof of innocence. In the second case the prisoner is compelled to dig a hole. He is then given a fowl to eat and enough palm-wine to make him quite intoxicated. After this he is laid in the hole, or possibly goes and lays himself down, and is then buried alive in order to prevent Moloki escaping with his last breath. A large fire is kept alight on the grave for two days, and then the body is exhumed and eaten.

An innocent man is carried round the village, decorated with beads, and his accuser pays a pig as compensation for the false charge.

THE BAMBALA IDEA OF IMMORTALITY

After a death from natural causes, women lament for several days, and guns are fired to keep off Moloki. The body is at first deserted by every one, but later it is laid out, painted with white clay, exposed for several days, and finally wrapped in cloths and buried with the feet to the east. The funeral is attended by near relations and idlers generally. A goat is killed and half of it buried, the rest being eaten. Pots are broken on the grave and a semicircular hut is set up over it.

During the mourning which follows, the village is deserted, and the inhabitants sleep for a time in the open. The hair is allowed to grow, and cut only when parasites accumulate to an intolerable extent.

After death the soul is supposed to wander about, and if the grave is neglected it disturbs and may even cause the death of its relatives. Otherwise it takes the form of an animal; if a chief, of a large beast, but it may also wander about in the air.

A RACE OF TALL, WELL-BUILT PEOPLE

In color the Bambala are very dark brown, the hair is absolutely black, and the eye a greenish black with a yellow cornea. The face is not of the ordinary negro type, but much more refined; thick lips, for example, are quite exceptional, and only a small proportion have flat noses.

The northern Bambala are strongly built and tall, but, as we proceed southward, with increasing scarcity of food comes a slighter type, which also seems to be lighter in color. The hands and feet are small, and, like those of all colored people, yellow on the palms and soles. They pick up objects with their feet with great dexterity.

In the north the women are not very good-looking, but farther to the south, where the males approximate a feminine type, there are real beauties among the softer sex.

Both sexes wear practically the same dress—a strip of palm-cloth of its natural color, about a yard in length and half a yard in width, worn round the waist in front and falling to the middle of the hips behind. Sometimes a girdle of similar cloth is added or a roll of grass colored with red clay, and the women, like many other Bantu tribes, wear a string of beads under their cloth. Men wear skin aprons occasionally on which the hair is left. The garments are sewn with native-made iron needles and palm fiber thread.

BAMBALA FASHIONS IN HAIR-DRESSING

The head is partially shaved, and the bare portion is painted with soot and palm-oil. Hair is allowed to grow on the top of the head in the form of a cap, and in old age a piece of palm-cloth, dyed red, may be added to cover a bald spot or white hairs. As a special decoration, a man who has slain a great enemy wraps the bones of the victim's fingers in a cloth and wears them on his head; this is supposed to have magical virtue.

There is another fashion of hair-dressing, which consists in leaving the hair at the back of the head only and making it up into tresses with soot and palm-oil.

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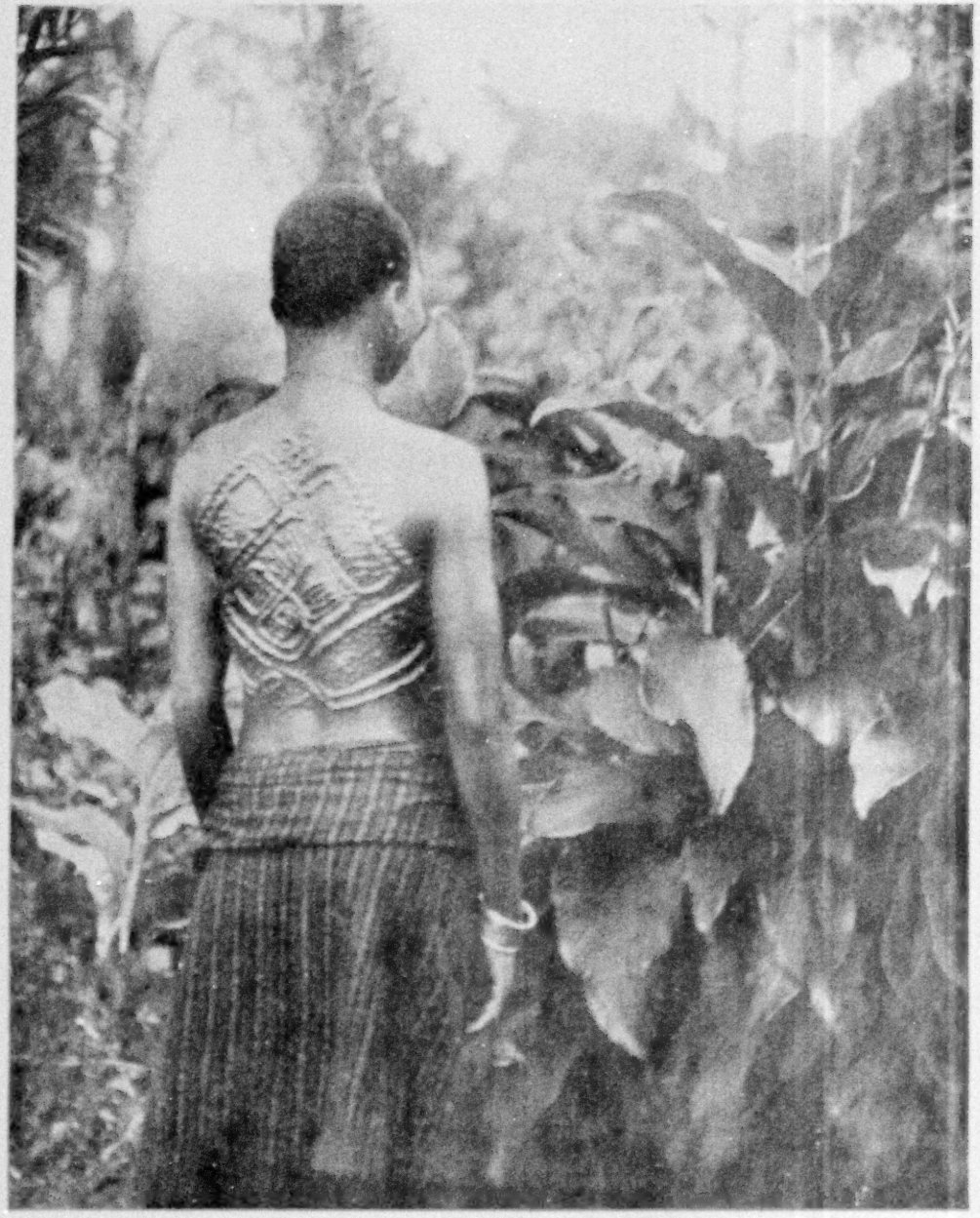
A BELLE OF THE BAMBALA TRIBE ROUGES NOT MERELY HER CHEEKS BUT HER WHOLE PERSON

All southern Bambala women are painted completely red; their clothes, hair, ornamental strings and beads, all are dyed with red-colored ferruginous clay. They are so fond of this color that they paint with it any gift they offer to a stranger. The coiffure is elaborate, and the band across the forehead is made of plant fiber. Note the pebble-dash effect of the cicatrices on the abdomen and on the shoulder.



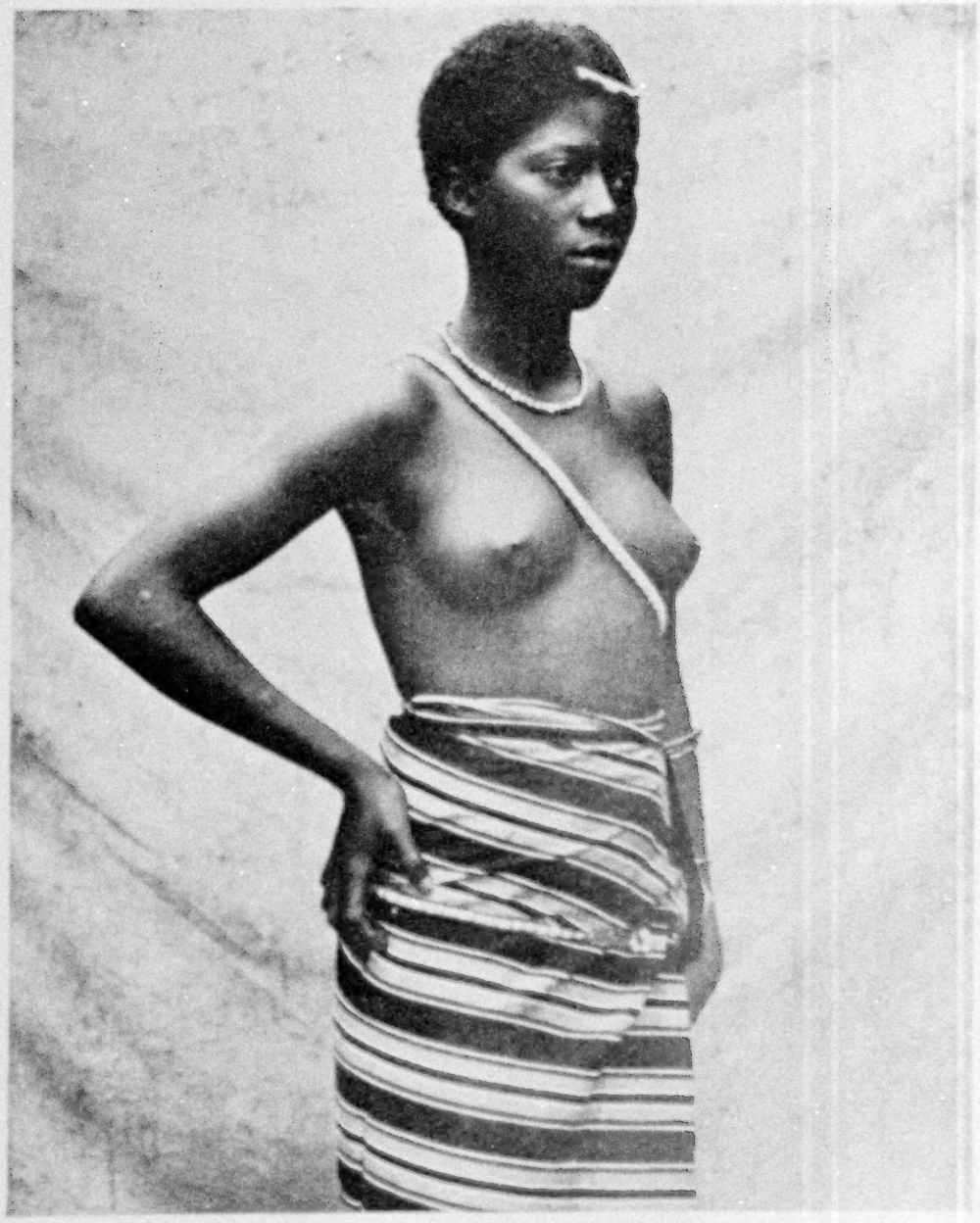
PEOPLES OF CENTRAL ASIA WEAVE THEIR DESIGNS IN RUGS; THOSE OF CENTRAL AFRICA WORK THEIRS IN HUMAN FLESH

Cicatrization is the favorite form of adornment among many tribes; but few women can boast of such a work of art as this Manyema girl has on her back. It is difficult to imagine the pain she must have endured while deep cuts were being made in her flesh, followed by the still more painful process of retarding the healing of the wounds, so as to obtain the highly raised scars.

XUM

FINE FEATHERS MAKE A FINE BEAU IN SOME REGIONS OF THE CONGO

A Mobunda native does not think himself presentable without an elaborate millinery creation, which may consist of bunches of feathers, a wreath of leaves, or a small wooden carving—any object that he thinks may contribute to his beauty. As for protection from the rays of the sun, he relies on the thick mass of woolly hair with which nature has provided him.

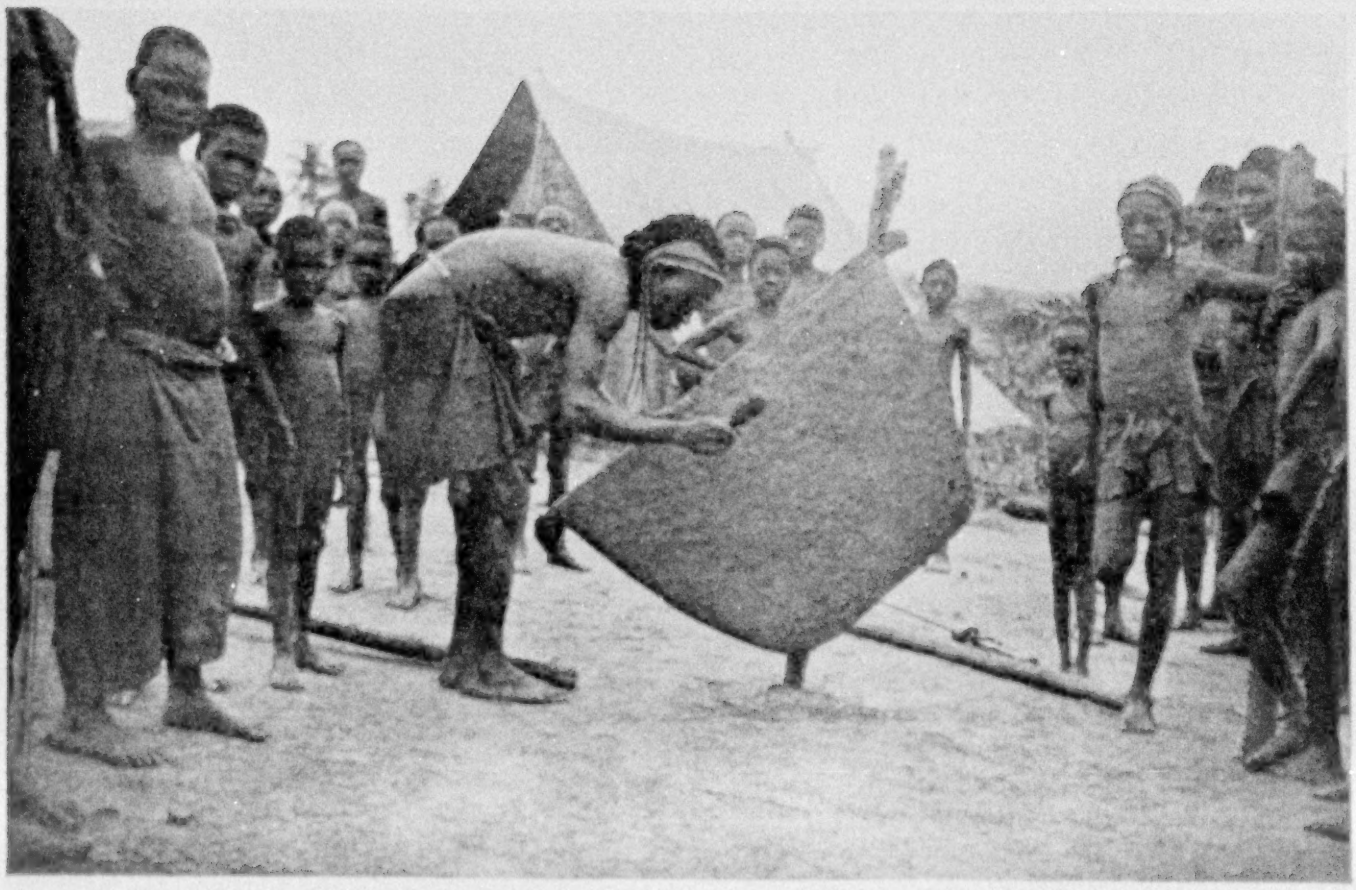


A WOMAN FROM THE TRIBE OF ZAPPO ZAP, A CHIEFTAIN CREDITED WITH 300 WIVES

As the traveler goes eastward he observes that the features of the natives become more refined. In some types very few of the characteristics usually attributed to negroes are to be found. The black color, so common on the west coast, is replaced by a soft chocolate-brown, which in certain individuals merges into dark yellow. Kasai people speak of the inhabitants of the lower Congo as "black negroes."

CONGO XYLOPHONISTS AND THEIR HOME-MADE INSTRUMENT

As found among the Bapinji, this is a highly developed instrument of music; it is well tuned in a scale closely resembling ours. The blades are made of hardwood, and each blade has a separate sounding-box, consisting of a dry gourd attached underneath. Some of the players are real artists and have a repertoire of many tunes, but from the expression on the face of the musician at the right it may be inferred that some one has struck a false note.



A BAPINJI BELLRINGER: HIS TOCSIN IS A WOODEN GONG

The gong is a highly developed means of signaling at considerable distances and certain tribes are past masters in transmitting even the most complicated messages.

A DRUMMER BOY AND HIS AUDIENCE

The drum is the principal instrument played at Congo dances. While the sounds produced by it cannot be called harmonious, they are loud and rhythmic. The drummer is a man of some importance and the presents he receives for his performances constitute quite a nice income.

The beard, too, comes in for adornment: it is often fairly long, but it is bound up under the chin, and pieces of clay are hidden in the knot to make its bulk larger. The eyebrows are usually shaved, as is the moustache.

Numerous ornaments are in use, but, though the ears are pierced, earrings do not seem to be worn. Combs, made of wooden teeth bound together, serve the double purpose of adorning the wearer and providing a means of conveniently scratching the head. Brass bracelets are imported from Europe in great numbers, and men sometimes wear iron bracelets made in the country. Imported rings are worn not only upon the fingers, but upon the great toe, and beads are also worn by both sexes.

Certain forms of ornament are reserved for men; these include teeth, human, leopard, or ape, the leopard teeth being usually imitation. Small antelope horns are worn round the neck, and these, too, are imitated in tin.

THEIR BODIES ORNAMENTED WITH SCARS

Tattooing is rare, for the color of the skin will not allow the pattern to appear to advantage; all that is done is to make a quadrilateral on the arm with three or four needles. Ornamental scars are more elaborate. They rise above the surface of the skin, owing to artificial retardation of the healing process. Men have a line running over the forehead from the outside corner of the eyes and a line across the chest, more or less straight, about one inch broad and often more than an inch above the adjacent skin; a lozenge pattern decorates the navel. The lozenge pattern is also usual with women, who

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HIS CROWNING GLORY

The Babunda women shave their heads, but the men are very proud of their abundant locks, which, when anointed with soot and oil, resemble nothing so much as floor mops.

RESTING AFTER A LONG TRAMP—LIKE A FLAMINGO, ON ONE LEG

This Bakwese is standing in a favorite position of rest. When on a long march, it is considered an unwise thing to sit down, as the limbs become stiff and further progress is sometimes impossible.

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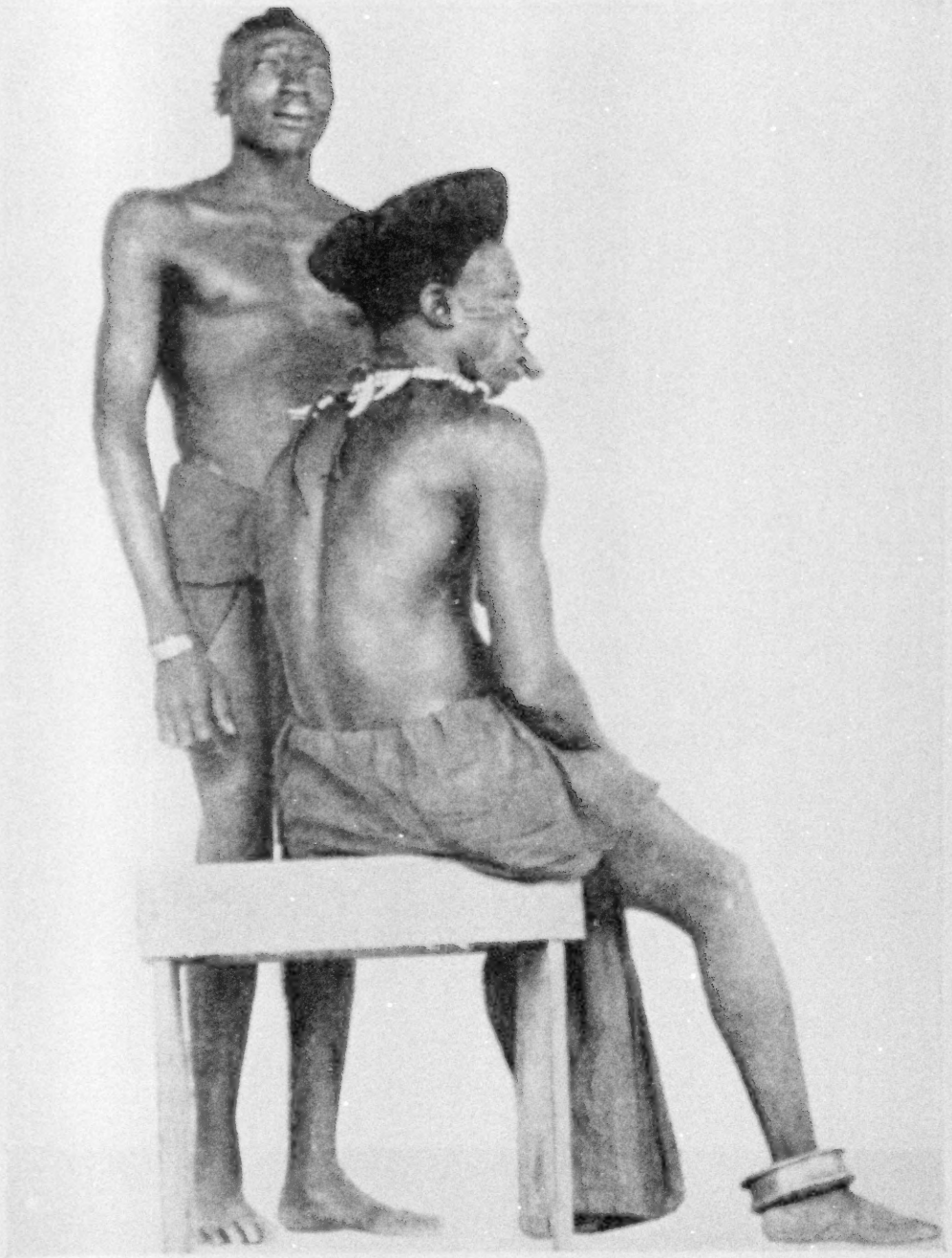
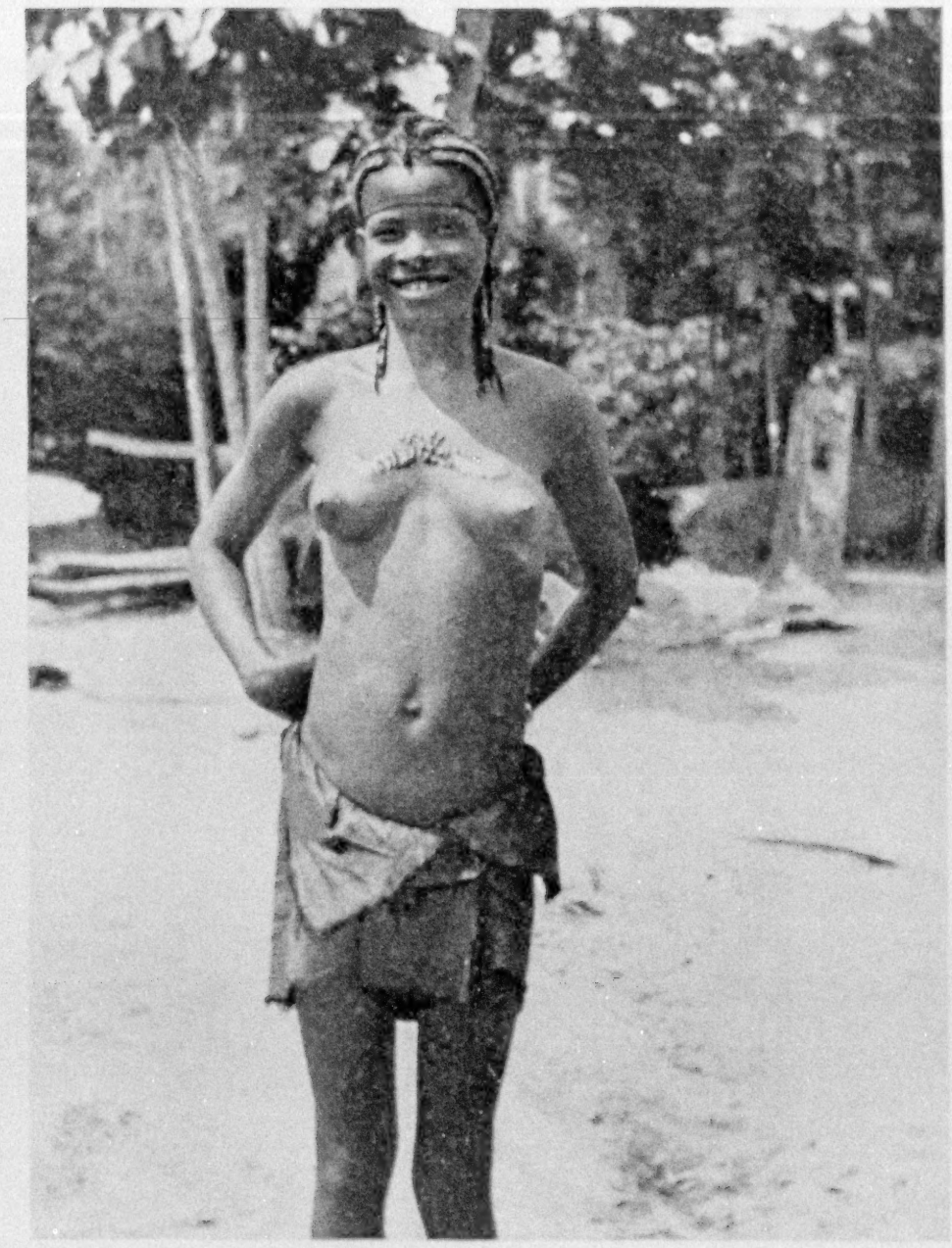


THE PELELE, OR LIP PLUG, IS ONE OF THE WEIRDEST ORNAMENTS WORN BY THE NATIVES OF CENTRAL AFRICA

Among the people near the mouth of the Lomami River both sexes adorn themselves in this way. The fashion is disappearing, but those who have abandoned the plug itself continue to perforate the upper lip.

IT IS THE FASHION AMONG WOMEN OF THE BAYANZI TRIBE TO SHAVE THE TOP OF THE HEAD

They allow their hair to grow long behind, however, and their shampoo is a mixture of soot and palm oil, while cords are used to make their thus laundered locks behave.



"WELCOME, WHITE STRANGER!"

In the Congo the traveler, if he has not made himself disagreeable, can always rely on the good-will of the women. On the other hand, they resent an insult to the village or the tribe more readily than the men and stir the latter up to seek revenge.

decorate both arms and body in this way. In addition the body is painted red. Clay is used for this purpose by the Bambala beaux and belles, who admit that the practice is intended to increase their beauty. In the case of mourners, the object being different, soot is used by the men and brown clay by the women.

HUMAN FLESH A RARE DELICACY

The ordinary food consists of manioc flour made into a paste with water and boiled. The leaves of the plant are also eaten prepared with palm-oil and pepper. Animal food is not limited to goats, pigs, and other domestic small fry, for, frogs excepted, everything helps to make a stew, from ants and grasshoppers up to man.

Human flesh is, of course, a special delicacy, and its use is forbidden to women, though they do not disdain to indulge secretly. Other titbits are a thick white worm found in palm-trees, locusts, rats, and blood boiled with cassava flour. Human flesh is not the only food forbidden to women; they may not eat goat's flesh, hawks, vultures, small birds, snakes, animals hunted with weapons, crows, or parrots. To the rule against flesh killed with weapons there are two exceptions—the antelope and a small rat.

Rich people, who can indulge in luxuries, eat kola nuts in great numbers. A kind of native pepper is known, and oil is obtained from the palm-nut. But the chief condiment is salt, which is made of the ashes of water plants. There is, however, a strong preference for the imported salt, which is in crystalline form as a rule, the crystals being perforated and strung on a string, which is dipped into the food-pot. On a journey salt is eaten as a stimulant and salt water is also drunk.

Earth-eating is by no means uncommon, and it is said to be good for stomach ache; the earth in use has an astringent taste.

As regards animal food, if there is abundance it is simply boiled and eaten with the fingers. It must be remembered

that meat for the Bambala is simply a bonbon, much as chocolates are for us. Once I killed an elephant, which the natives were at liberty to consume—blood, skin, and bones, if they pleased. After they had eaten as much as they wanted they came and asked for their dinner.

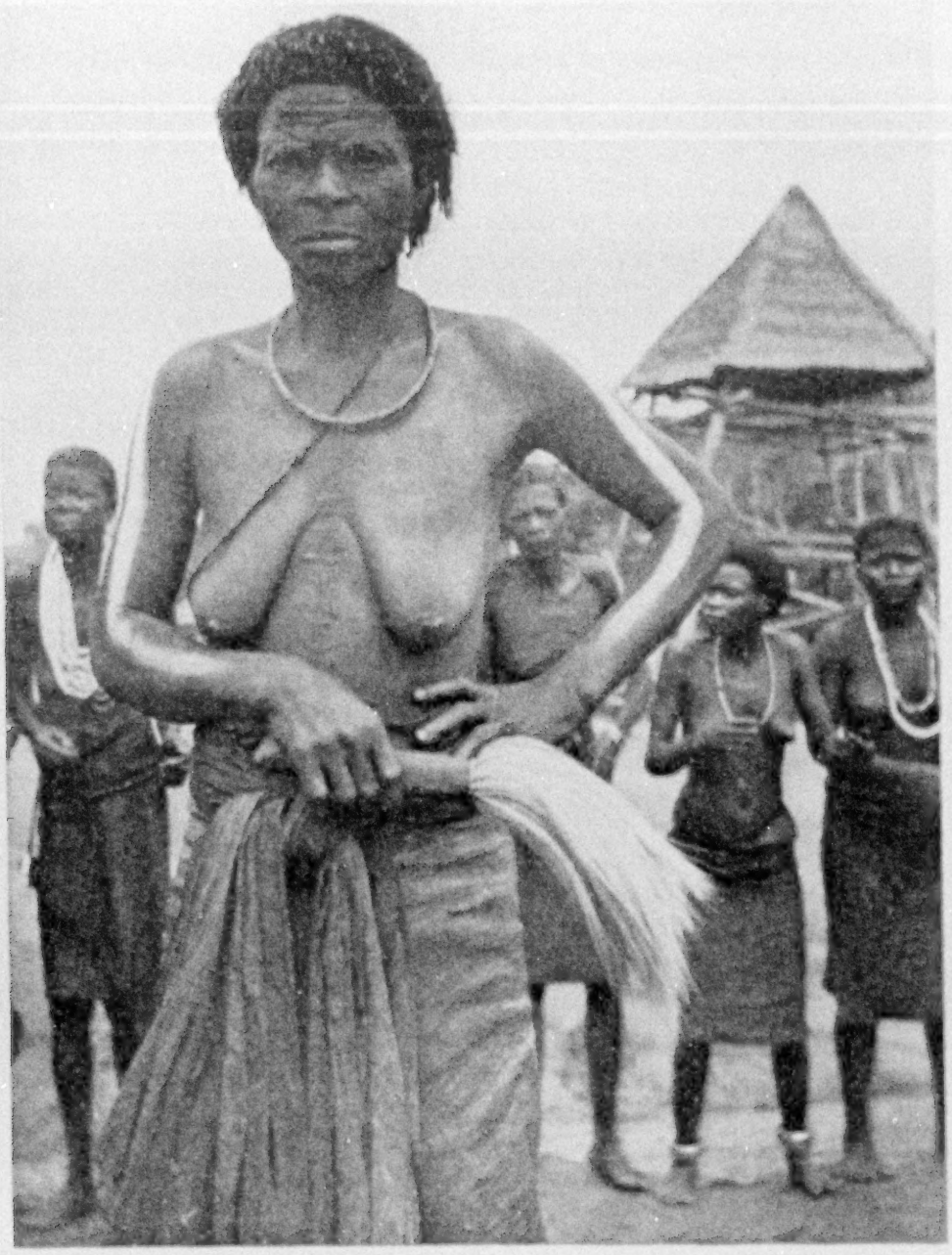
Goats and pigs are slaughtered by being clubbed so as not to lose the blood; but the former are also skinned alive and die under the knife, which is of iron, home-made, and as sharp as a razor.

CANNIBALISM A COMMON PRACTICE

Cannibalism is an every-day occurrence, and, according to the natives themselves, who display no reticence except in the presence of state officials, it is based on a sincere liking for human flesh. Enemies killed in war and people buried alive after the poison test, or dying as a result of it (see text, page 342), are eaten; so, too, are slaves, and farther north and near the river these are killed on rare occasions to provide a cannibal feast. In the latter case the body may be buried for a couple of days and a fire kept burning over the grave. The flesh is consumed in the ordinary way with manioc flour.

I have never been able to trace any magical or religious basis for any of these customs. Vessels in which human flesh has been cooked are broken and thrown away, and this rather suggests some magical idea, but the men say that the custom is only adopted to prevent women or other prohibited persons from using the same pot afterward. On the other hand, this prohibition against using the pot subsequently suggests that there was in the past some idea of possible magical effects, though women are at the present day debarred from human flesh, as they are from goat's flesh, only in order that there may be a larger supply for the men.

There is only one way of abolishing cannibalism in these countries, and that is not by making laws against it. On one occasion I gave one of my boys a tin of



SHE WEARS HER BADGE OF SORROW ON HER ARMS

Mourning in the Congo may be expressed in different ways according to the tribe to which the bereaved belongs, and also according to the degree of relationship to the deceased. Sometimes the whole body is besmeared with clay of a certain color, sometimes only the chest or the arms. It is usual for mourners to let their hair grow until the period of mourning is over.

THE BAOBAB, A NATIVE OF TROPICAL AFRICA, IS ONE OF THE LARGEST TREES KNOWN

It is not infrequent to find near the coast a tree of this species with a diameter of 30 feet. Both cloth and ropes are made from the fibrous bark, and the trunks of living trees are sometimes excavated to make houses. The fruit has a cool, pleasant taste.

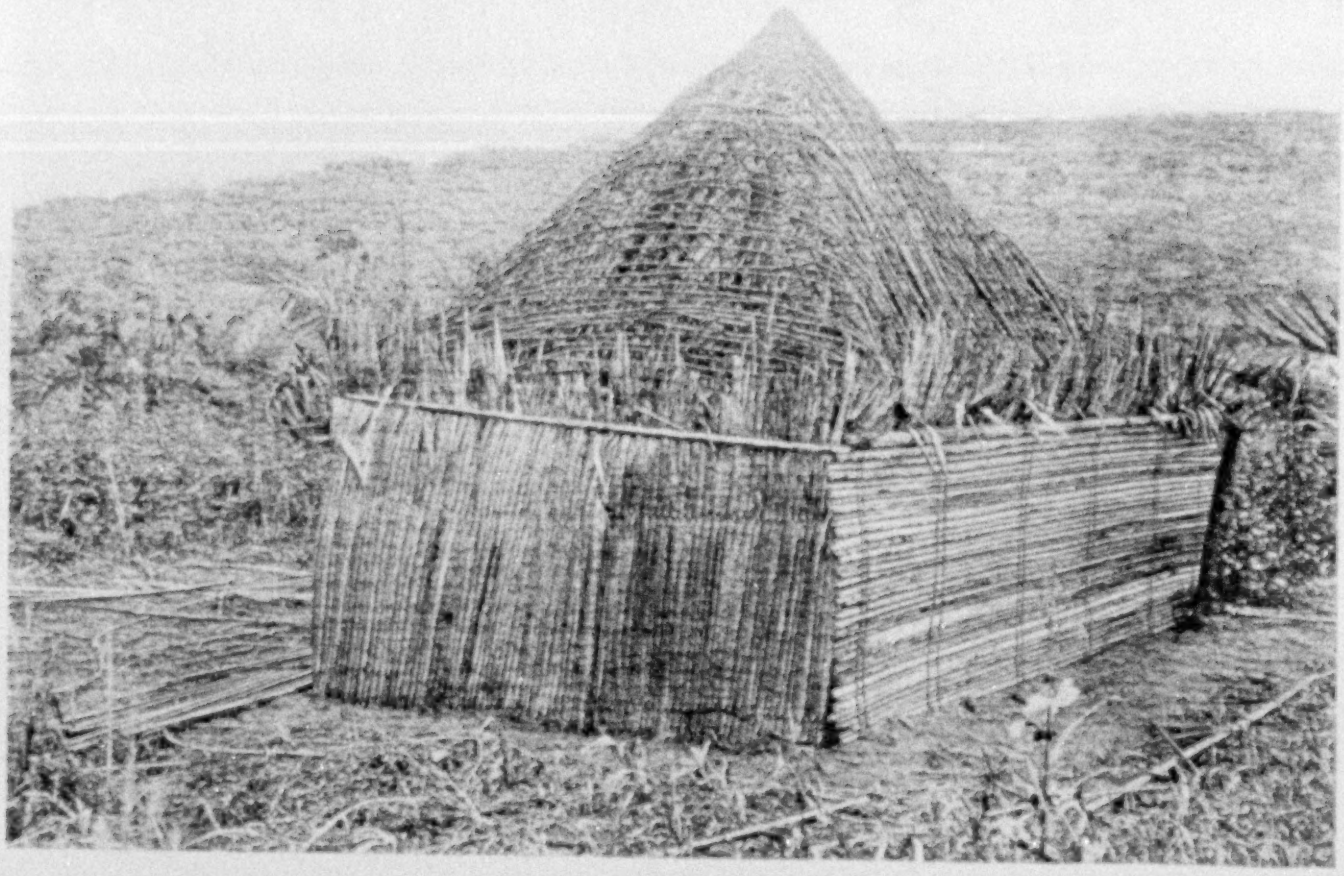
XUM

A MAGIC CIRCLE OF VILLAGE CHARMS

A heap of stones surrounded by cane-work, a few skulls of animals, the shell of a landrail dyed red, and similar objects are supposed to have great magical powers.

AËRIAL GRANARIES SAFEGUARD THE FOOD OF THE BAPINJI TRIBE

To avoid the depredations of rats and of other vermin, the Bapinji have devised a suspended granary in which to store such products as ground-nuts.

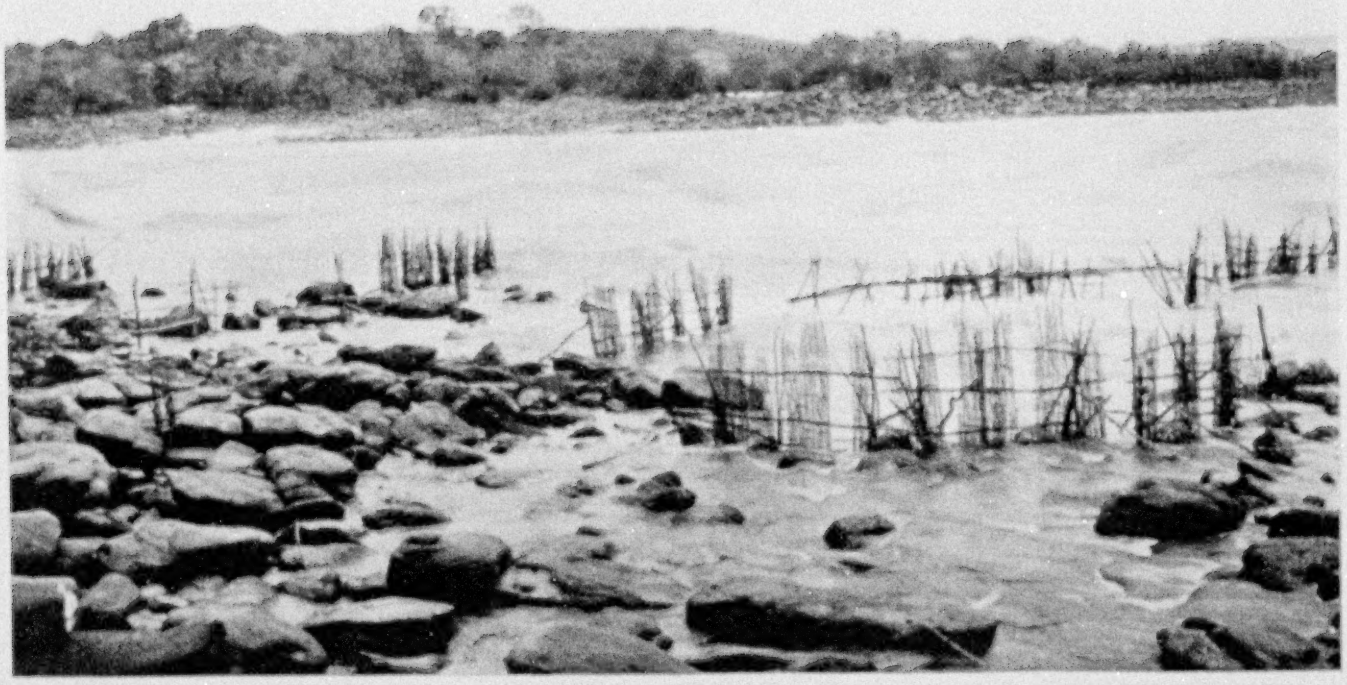


A HOUSE OF REEDS

In some parts of the Congo, when a house is to be built, a frame-work is first erected, and this is then covered with grass. It is a curious fact that village fires are a rare occurrence, although the people keep a fire going all night, and no special precautions are taken to avoid conflagrations.

THE HOUSES OF THE NATIVES ON THE LEFT BANK OF THE KWILU PRESENT A PICTURESQUE APPEARANCE

The doors are covered with porches made of thatch, which seem to be resting on two wooden pillars; these are, however, purely ornamental. The fowl-houses are smaller in size and round, otherwise they are imitations of the human habitation.



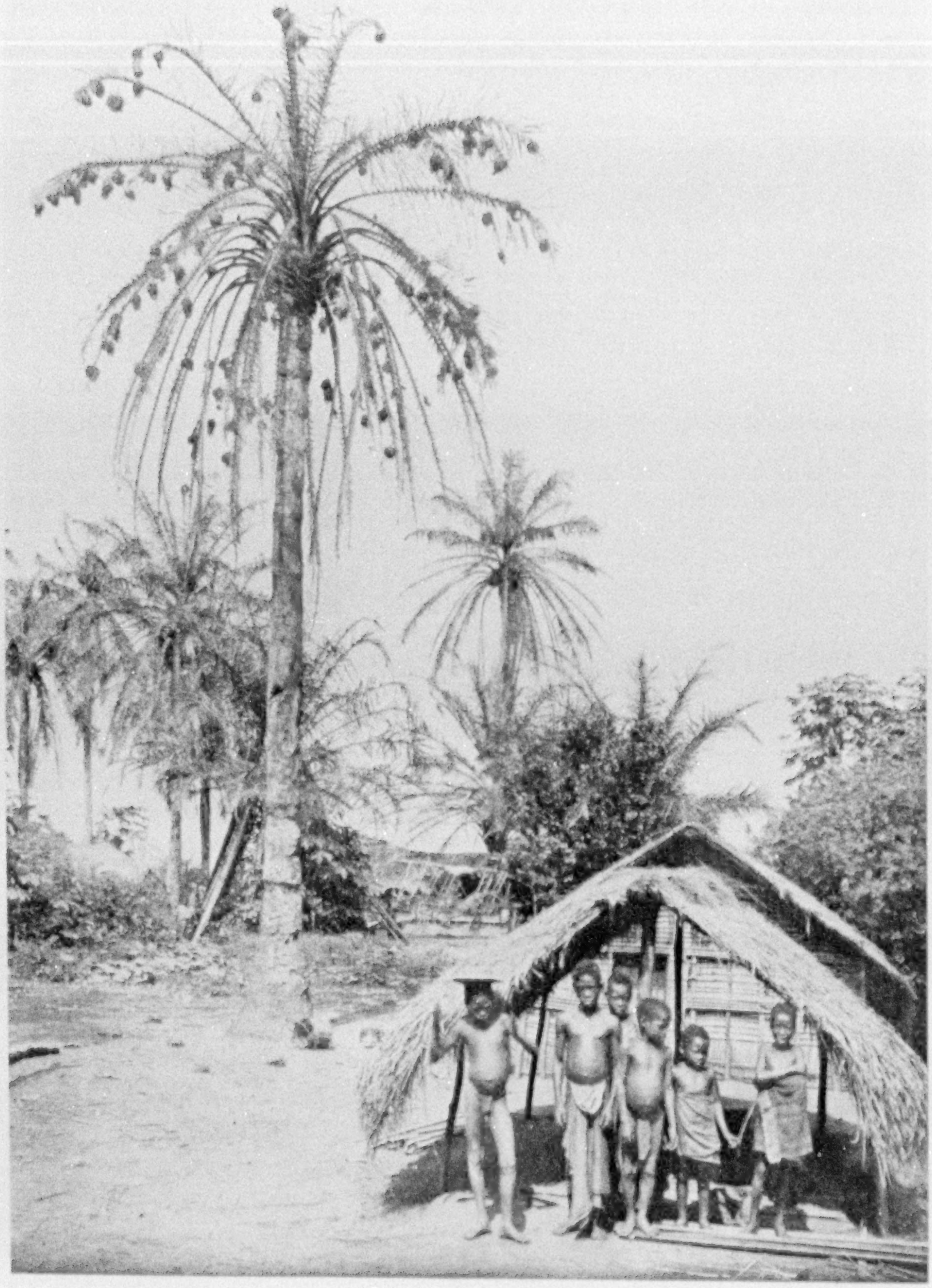
FISH TRAPS FURNISH MUCH OF THE FOOD FOR CENTRAL AFRICAN TRIBES

The catch of low-water periods is often cured so as to last during the rainy season, when the high water prevents the capture of a fresh supply.

SHE'S GOING FISHING

Fish are mostly caught in traps and in baskets. Some of the baskets are very large and are fastened between the sand-banks; the fish do the rest. Fishing in the river is the occupation of the men; in swamps it is done by women.

XUM



WEAVER-BIRD NESTS HANGING LIKE FRUIT FROM THE LEAVES OF A TOWERING PALM

In many villages along the Kwilu River the palm trees are covered with nests of a species of black weaver-bird. At regular intervals the natives take the fledglings and cook them whole in oil. They are considered a great delicacy. Note the youth at the left of the group in the foreground who seems to be intent upon keeping his costume on straight. It consists of a straw hat, evidently the gift of some European trader.

sardines, telling him to give his companions equal shares. With tears in his eyes he said that it was impossible; he could not eat sardines, for the cook had given him a *kissi* (medicine) to prevent him, and he would die if he ate them. I put him at his ease by giving him a stronger *kissi* from Europe, and to see him dispose of those sardines was a real joy.

To wean the Bambala and other tribes from cannibalism it is necessary to give them a *kissi*, which will prevent them from eating human flesh under penalty of death if they disobey. I have not the slightest doubt that if some one in whom they had confidence adopted this means they would give up eating human flesh once and for all.

BAMBALA TRADERS ARE EXPERIENCED PROFITEERS

Among the Bambala every one is a dealer in live stock, which is exchanged for rubber, and this in turn is traded to Europeans for salt; the salt is exchanged for slaves, the slaves sold for *djimbu* (small shells, which serve as currency), and more goats or other live stock purchased in the country where they abound. In this export trade men alone are engaged; in the home trade—in food and pottery—women have in like manner a monopoly. The natural preference of chiefs and important men is for trade, but they do not regard labor as smiths or basket-makers degrading.

The purchasing power of their unit of value may be judged by the fact that the price of a female slave ranges from 15,000 to 20,000 *djimbu*. A hundred *djimbu* will purchase one fowl or one big iron block or 12 ounces of salt; an iron hoe blade is worth 300 *djimbu*.

The profits made in trade are enormous. Eight thousand *djimbu* will purchase ten goats, for which 250 balls of rubber are obtained; these are worth ten stone of salt, for which two slaves can be purchased, and the two male slaves will fetch 20,000 *djimbu*. These operations take about a month, and the gross profit is 150 per cent. The trader, as a rule, goes in person and takes his own food. He spends nothing on clothes, and the question of shoe leather does not trouble him. He may spend a few *djimbu* on palm-wine, but there are practically no deductions from the gross profit except for losses by death of stock or by robbery.

In Kolokoto 100 *djimbu* are equivalent to from four to six cents, American money; in Luanu they may rise to a premium of 100 per cent; on the Lukula they fall to a value of three cents. Taking the mean value, a man with a capital of $5 makes $90 per annum, even if he does not add to his capital. If he chose to put all his profits into his business, he would at the end of a few years be a rich man, but, of course, long before attaining to such a fortune he would be suppressed by jealous neighbors or highwaymen. Furthermore, the nature of their trade does not admit of unlimited extension.

Credit is a well-recognized thing, not only from one market day to another, but for longer periods, and to people residing at considerable distances. Interest amounts, as a rule, to 400 per cent per annum.

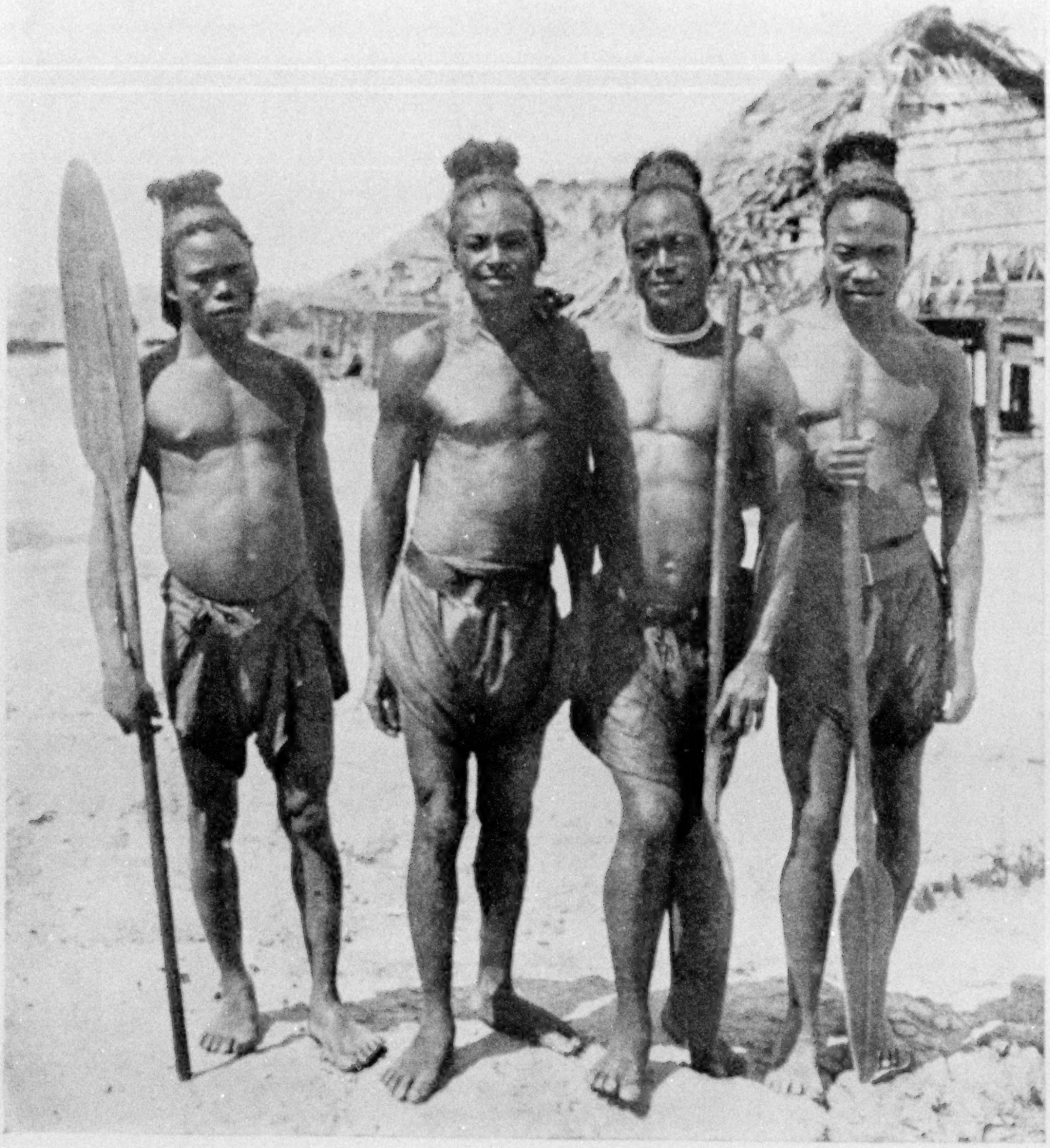
Little anthropological research has been carried out in Central Africa, and the natives from inland are usually referred to by the people from the riverside, and consequently by the Europeans, as "Ngombe," which really means bushmen. Their appearance is certainly such as to inspire little confidence, their faces being considerably disfigured by cicatrices, without which no Ngombe would think himself presentable.

Not only are the Ngombe and the Bambala tribes cannibals, but most of their respective neighbors likewise, and their enemies know that if they fall into unfriendly hands they will be treated with the utmost cruelty.

IN THE LAND OF THE LIP PLUG

If I described the Ngombe as ill-looking, what shall I say about the natives I met farther up the Congo near Basoko? Here the lip plug is in general use. At an early age a small hole is pierced in the upper lip, and this, by the insertion of wooden disks of ever-increasing size, is so extended that it finally measures more than two inches in diameter.

If one considers, furthermore, that these people are cannibals and do not try to conceal it, it is easy to understand that



THEY TOIL NOT, NEITHER DO THEY SPIN, BUT AS PADDLERS THEY ARE UNEXCELLED

These Wagenyas are members of a typical tribe of fishermen, among whom all work which is not connected directly or indirectly with fishing is performed by women. No man would carry a load; if he is asked to transport some of your luggage he will agree to do so, and then send his wife or wives to perform the task. On the other hand, they are ideal paddlers, and fatigue and fear seem to be unknown to them.

a newcomer regards them with little sympathy. If, however, one lives some time among them, he gets accustomed to their lack of dress and weird ornaments, and comes at last to think these rather becoming.

Often I have heard two Europeans quarrel over the merits of the tribe with which each was best acquainted, and I have found that when I have referred to the *pelele* (the lip plug) with disgust older residents in the country have felt quite hurt.

Stanleyville, at the time of my first visit to the Congo region, was a curious mixture of an Arab, European, and negro town. Whatever harm the Arabs may have done to the natives, and there is no

doubt that in their slave-raiding expeditions they have slaughtered them by thousands, they certainly have taught them many a good thing. It was the Arabs who introduced rice, Madagascar potatoes, beans, and many useful plants. They have taught the natives cleanliness and established schools in many centers.

I had expected to secure at Stanleyville all supplies necessary for my overland journey, but when I arrived I found that the natives themselves were exceedingly short of stores. There were neither camp beds nor tents to be had; and as for food, I was able to secure four pounds of flour, some sugar and tea, a few tins of preserves, and a generous supply of pickles. These goods were expected to suffice me for four months.

PROOF OF THE CATCH IS THE SHOWING THEREOF

Like the grapes which Joshua brought back from the land of Canaan, it frequently takes two men to carry one fish caught in the Congo.

I crossed the river under the famous falls in a canoe, and then my luggage was carted by men to a place above the falls where another boat was waiting for me. It was only a dugout, but was of immense size, being manned by 40 paddlers. At every village the crew was changed, so that the men were never taken far from their homes.

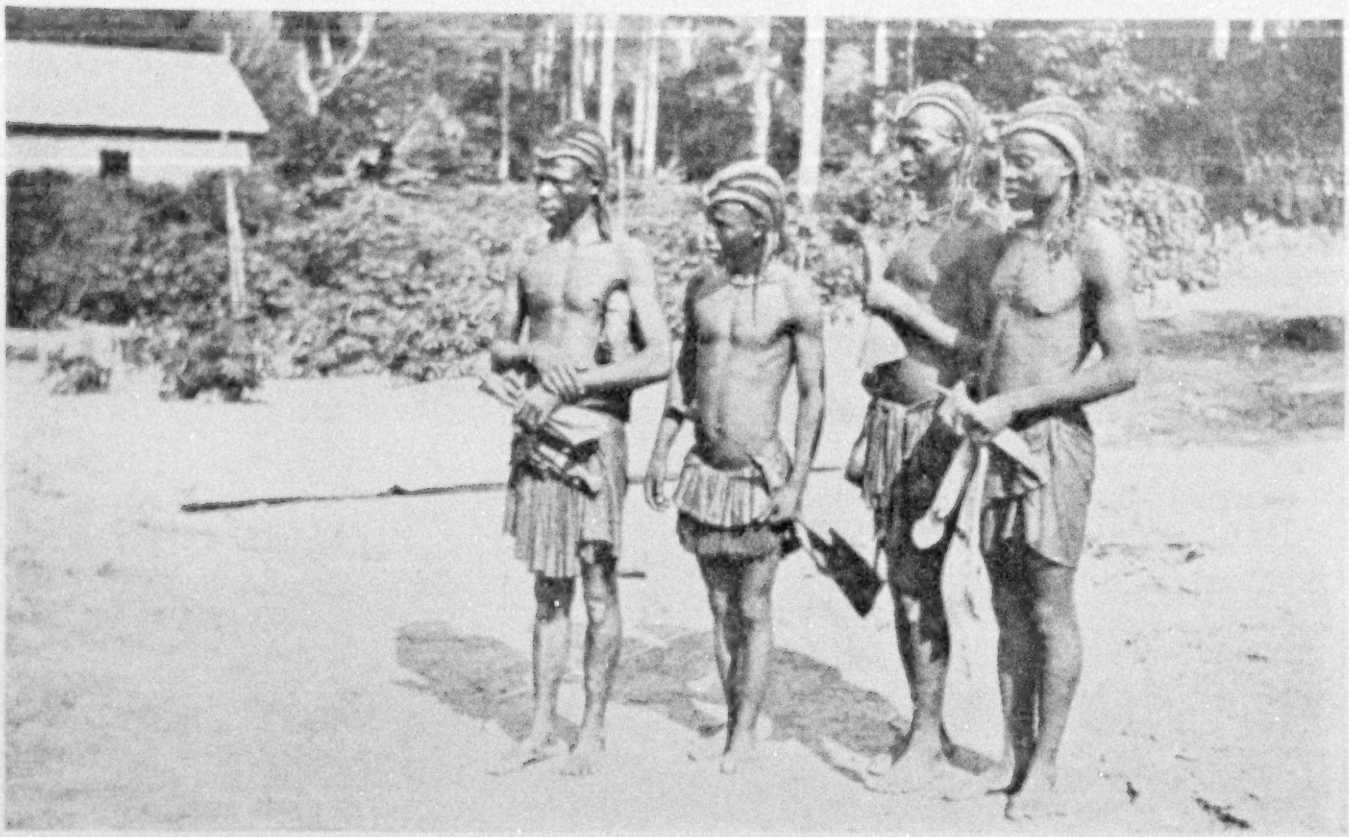
BREAKING A STRIKE BY KIDNAPING A TRIBE'S WOMEN

In one place the men refused to work, and it was only through strategy that I was able to proceed. The women alone were in the village, and the men, standing at some distance, mocked me.

I instructed my boy to put a number of paddles into the boat, and then I invited the savage ladies to come aboard and sell me some food. I was relying upon the universal eagerness of the negroes in this region to trade; and the scheme did not fail me, for soon 30 women were in the boat bargaining.

Without attracting their attention, my boy unfastened the rope by which the boat was secured to a tree, and before the saleswomen were aware of what was happening they found themselves floating downstream.

The effect of this maneuver was imme-

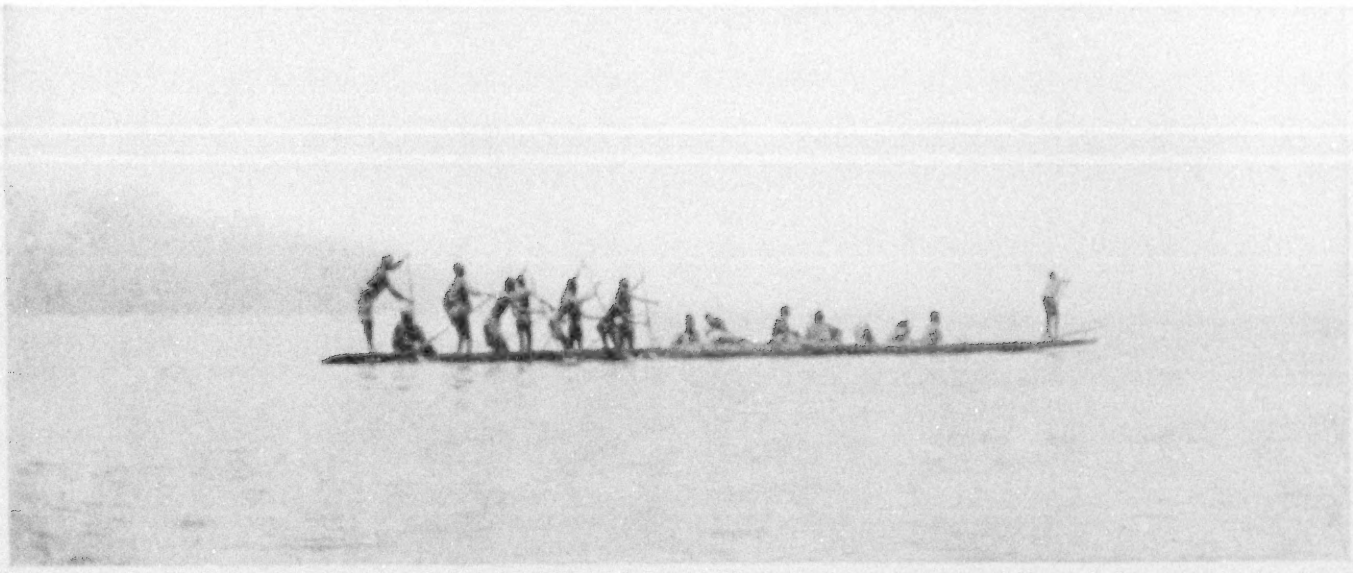


THE SOUTHERN BAMBALA YOUTHS ARE RATHER EFFEMINATE IN APPEARANCE, BUT THEY HAVE GREAT POWERS OF ENDURANCE

Always gay, easily made happy, they are friendly toward Europeans and make most desirable neighbors and companions. The northern Bambala are strongly built and tall, but farther to the south, with increasing scarcity of food comes a slighter type, which also seems to be lighter in color. The hands and feet are small and they use their toes with great dexterity in picking up objects from the ground. In the north the women are rather homely, but in the south genuine beauty is to be found among the softer sex.

OFF ON A SHOPPING EXPEDITION IN THE CONGO

Marketing is one of the duties of the woman in Central Africa; it is also one of her great pleasures. Thus it appears that the joys of bargain hunting are not the exclusive prerogative of western civilization's womankind. All blacks are born traders, but the female of the species is more clever than the male.



A DUG-OUT LEVIATHAN OF THE CONGO

The native boats of the upper Congo are of great length; they are easily steered by two men, one in front and one behind, and Europeans usually travel by boats manned by forty or fifty paddlers. I saw one dug-out which required a crew of eighty; it was broad enough to place in it a table surrounded by four chairs. The diameter of the tree of which it was made must have been six feet.

diate. The men set out in their little canoes and demanded the return of their women. I offered to surrender one hostage for every man who would come aboard and take his place with a paddle. In half an hour I was continuing my journey triumphantly, as all the ladies had been redeemed from pawn.

THRILLING INSTANCES OF COURAGE AND LOYALTY

In my travels in this region I found many records of extraordinary acts of heroism and loyalty. One man had had his feet burned off by the Arabs, but no torture could induce him to betray the white man who was being sought. Another native had been hanged by his beard on the branch of a tree and had had his lips cut off, but he remained faithful to his friends.

One of the most tragic instances of my whole seven years' stay in the Congo occurred on the banks of the Luzubi River, when Makoba, a black boy who had proved his loyalty to me in a thousand ways and who had been responsible for saving my life when I myself had wished to lie down in the jungle and die, came to ask me if he could go to bathe in the stream.

His request granted, off he went. It was twilight, and I was sitting quietly in camp, when I heard an awful shriek: "Bwana ango, Bwana ango!" I knew it was Makoba. The cry was then repeated from a greater distance, and once again farther away.

I snatched my rifle, called to my men to follow me, and rushed to the river. At first I could see nothing, but soon I observed traces of blood, and upon examining the soil found the footprints of a leopard.

The writhing on the sand showed that Makoba had been knocked over and dragged into the water.

Holding my rifle over my head, I swam across the stream, beyond which my men soon found the spoor again, and we followed. Darkness overtook us, however, and we were forced to return to camp. I would not own myself beaten, and the next morning, after a sleepless night, we continued our search. At about 8 o'clock we found what was left of my faithful companion; the head had been torn off and half the shoulder had been devoured by a leopard.

I lay in ambush, but the whole day passed without a sign of the foe. At last, when I thought I should have to give it up because of the darkness, the beast arrived, and a bullet from an express rifle avenged Makoba.

AN ENGLISHMAN'S DEATH STRUGGLE WITH A LEOPARD

Although lions are more troublesome than leopards in the Katanga region, the

THE SMALL BAMBALA DOORWAYS OFTEN RESEMBLE ENTRANCES TO TRAPS

They are usually oblong openings. There is a special knack of getting into a hut, and the stranger who has not acquired this is sometimes unable to get in or out. In size and cleanliness, however, these huts compare favorably with those of many other tribes.

latter take a considerable toll of the weaker part of the population; they usually attack women or children.

I heard of an English mining engineer who lost his life through one of these pests of the jungle. He was hunting fowl when he found himself face to face with the big cat and had no choice of flight. He poured the contents of both barrels of a shotgun into the animal, but the leopard sprang at him, knocked him down, and inflicted terrible wounds.

The man attempted to reach his hunting knife, but whenever he made the slightest movement the leopard, which was lying on him, mauled him furiously.

After some time the jungle cat became weaker, and the Englishman succeeded in drawing his knife and stabbing it to death. When the rescuing party sent out to search for the hunter arrived, he was found lying upon the ground with the leopard still covering him, as he had not the strength to shake off the brute, and he was trying with his injured hand to roll a cigarette. Two hours later he died from loss of blood.

In my time the community of Pweto was outside the tsetse-fly belt, and we were able to keep cattle, our herd increasing splendidly. Lions never came near the place, and the hyenas, whose howling we heard every night, dared not enter the kraal. Our donkeys slept in the open, and one night a hyena attempted to carry off a foal; but it had gone to the wrong address, and the next morning we found the aggressor with its brains kicked out.

IN THE COUNTRY OF THE DESTRUCTIVE TSETSE-FLY

Some years later the destructive fly invaded this region and all the cattle were destroyed. The sleeping sickness made its appearance, and lions, too, had come, the latter in such number and with such impudence that it became necessary to post sentries at night, the men standing guard on the roofs of the houses.

What lions will do when they get into man-eating habits, I had occasion to experience on the Lukumbi River. Coming

home from one of my rambles, I reached a village situated near the river.

I could not understand why the natives received me with such unusual manifestations of joy until I learned that eight man-eating lions had taken up their residence near the settlement, and that several persons had been killed. The prowlers became so impudent that they would come at night to the village, leap over the fires which were kept up all around it, and, jumping on the thatched roof of a hut, would break it by their weight and carry off the unfortunate occupant. Now the natives expected me to shoot all eight of their enemies.

THE TRAVELER'S DOG GIVES A DANGER SIGNAL

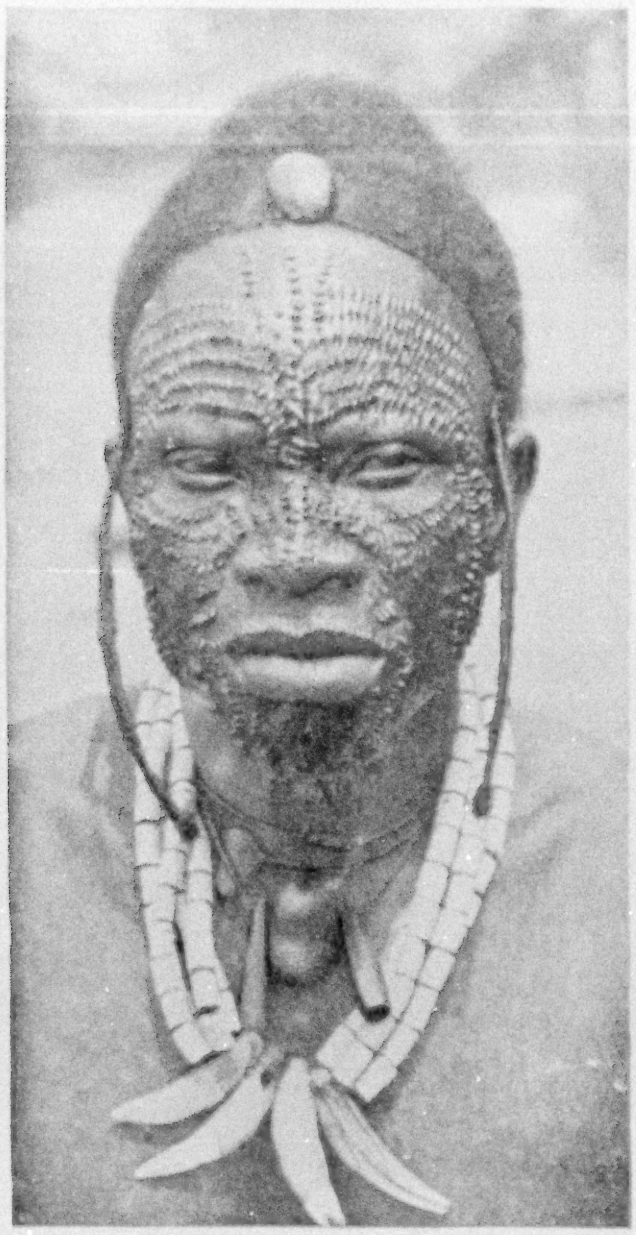
I had just prepared for dinner and my boy was approaching with my soup tureen, a highly-treasured piece of crockery, when there resounded the well-known "Whuuuua" of the king of animals. Smash went the tureen, and the boy disappeared into the hut, from which neither threats nor cajolery could bring him, so I had to serve my own dinner.

After lighting fires around the camp and arranging with the natives to pursue the enemy the next morning, I went to bed. I slept soundly until I was awakened by Sanga, my little dog, who, shivering and trembling, was trying to crawl underneath my blanket, giving painful little whines.

I got up cautiously and opened the door of the hut. When my eyes became accustomed to the light of the full moon, I saw just beyond the fire a grayish mass, and finally I distinguished the glittering eye of a beast of prey.

With as little noise as possible, I returned to the hut and fastened a piece of paper to the front of my barrel to enable me to aim in the semi-darkness; then, kneeling and resting my rifle on the doorstep, which was about a foot high, I took careful aim and fired.

The shot aroused the whole camp and general confusion followed. My eye still on the spot where I had seen the animal, I waited; nothing moved. Then I went nearer; the little dog, howling with fear, walked in front of me. She was afraid, but she knew her duty, did Sanga, and never flinched. Nearer and nearer we came to the spot where I had seen the beast, and there we found a fine lion stone dead.

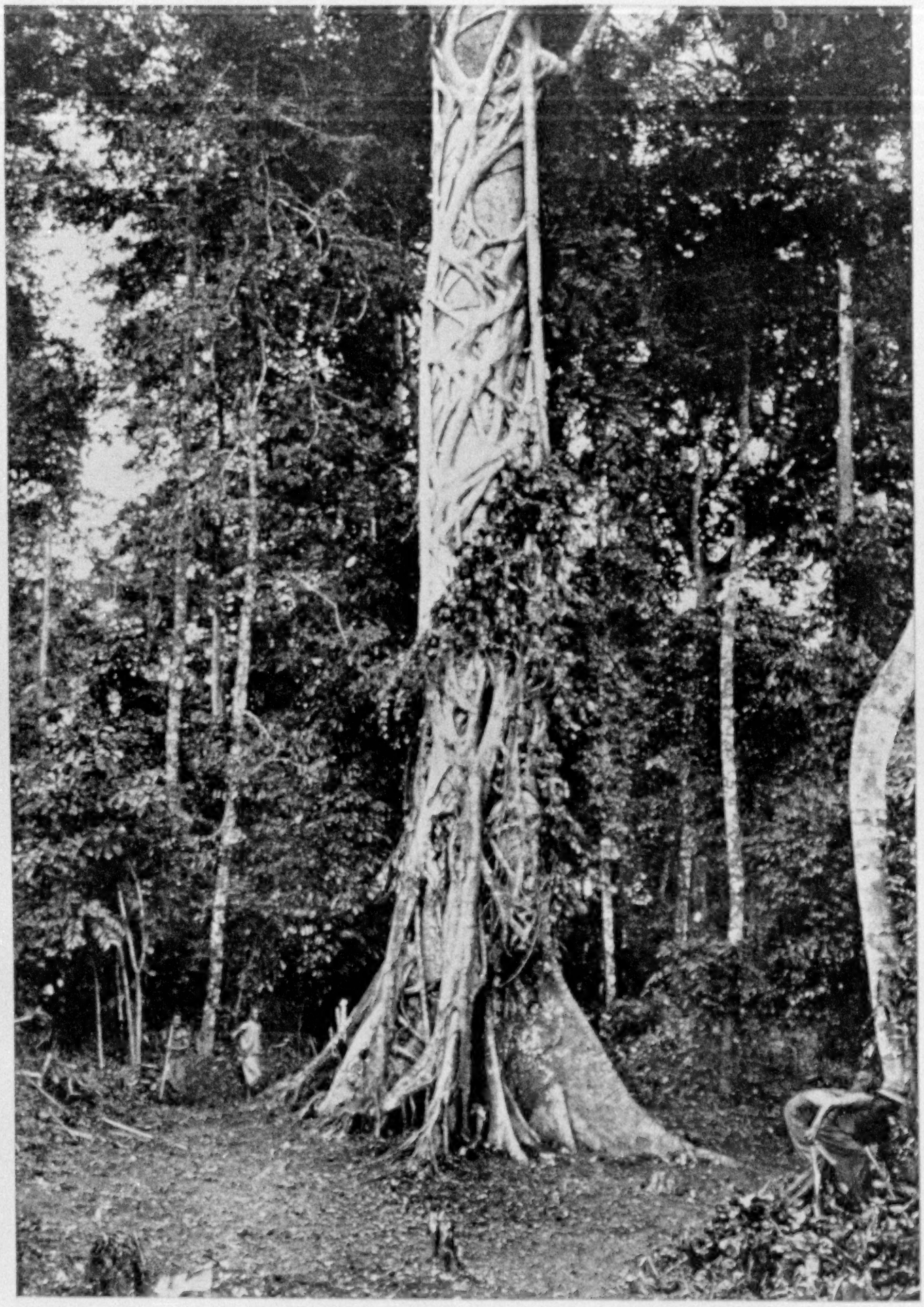


THE SCARS ON THE FACE OF THE CHIEF OF THE BAPOTOS MAKE HIM THE ADONIS OF HIS TRIBE

To make these scars on the brow, nose, and cheeks is child's play compared to the painful operation of making those on the lips. Neither boy nor girl, however, would like to be without them.

FIGHTING THE "MOST DANGEROUS ANIMAL" IN AFRICA

But there is a greater menace in Africa than the lion, the hyena, or the leopard. The mosquito is the most dangerous "animal" in Africa. You can defend yourself against the king of beasts; snakes flee before the approach of man; crocodiles are quite inoffensive on land; but the



A CLIMBING PARASITE OF THE CONGO

Many of the vines of the forest slowly, but inevitably, kill their tree hosts.

mosquito displays in its warfare against the human race an energy worthy of a better cause.

I used to begin breakfast at 5 in the morning, with the aid of two boys to fight the mosquitoes, while I breakfasted amid the fires of dried baobab fruit, which produces a strong and disagreeable smoke. But even these defenses were frequently ineffectual. I went to work, still protected by my two boys, who frantically waved branches on all sides of me, but without producing much effect. In the afternoon there was a change, but only in the boys. The first two retired exhausted, and their successors applied themselves with vigor to the work of keeping mosquitoes at bay. When evening came, dense clouds of my tormentors obliged me to retire finally under my mosquito net.

Apart from these little pests, there is an abundance of snakes in the Kinchasa region, which makes the keeping of domestic animals impossible. I have seen whole pigs swallowed by these reptiles.

ASSEMBLING A RETINUE FOR AN AFRICAN TRIP

When following the trail in Africa, it is quite impossible to venture into new country if one cannot rely upon one's own people. Consequently, though I am highly conservative, I am likely to keep my two servants for the whole time. I at once reject all who do not give complete satisfaction in the early days of their service. Accordingly, I sometimes find it necessary to engage and dismiss fully twenty boys in the first two months before I finally get one who is to my liking. On one of my journeys in the Congo I secured my boy under the following circumstances:

A European informed me that he was parting with his cook because the latter was vain and fond of dress, and never ready with the meals at the right time because he was always engaged in beautifying his person. Now a negro who adorns himself to perform his culinary duties is a real treasure.

If in a European settlement you see a man who is exceptionally dirty and disgusting in appearance, you may be sure he is a cook. The blacks insist on their wives making use of spoons and other appliances when they prepare food for their lords and masters; but precautions are deemed useless when it is only a European who is to consume the product. I have seen an exceedingly dirty individual preparing meat-balls for his master by taking the mince into his hands and rolling it on his chest until it was shaped to his liking. I may add that his master was not present.

But the aboriginal beau, whose name was Bokale, served me faithfully and gave much satisfaction till he was called to a higher sphere of duty as chief of a village. Upon learning of his weakness for self-adornment, I interviewed him at an early opportunity, giving him some good advice and practical illustrations, and assured him that for the first month he might serve up my food half cooked, burn it or otherwise render it uneatable, but that if after the expiration of his period of probation he did not serve me tip-top meals I would visit his iniquities with grievous unnamed penalties.

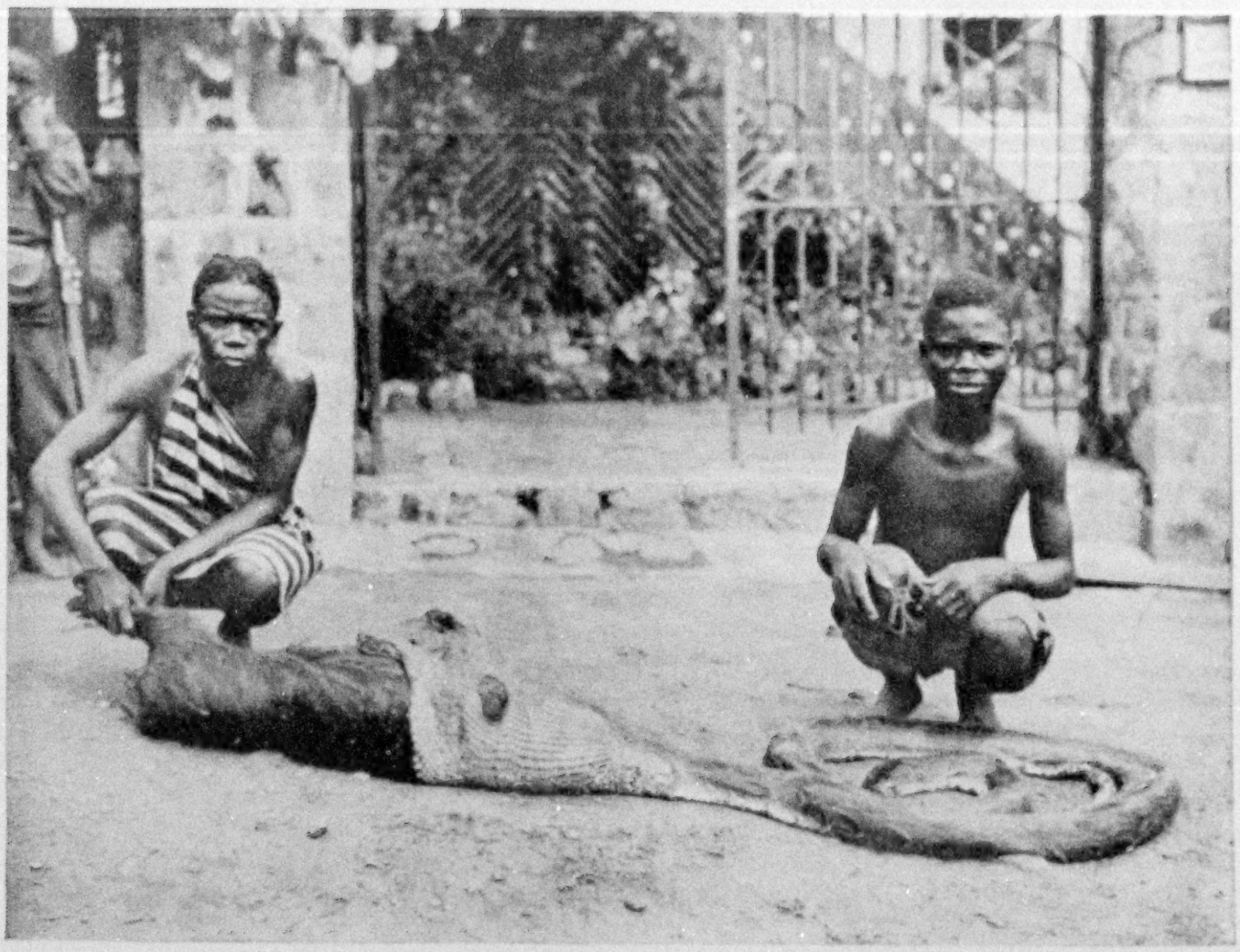
In the course of my adventurous years in Central Africa I came to entertain a genuine respect and, in some cases, affection for many of the black people of this little-known land whose inhabitants are so generally misjudged. The European or American who goes to Africa for the first time is prejudiced by the tales of white men on board ship or on the coast. He judges whole tribes by his observations of the negroes on the coast—those who have all the vices of both the black and white races and the virtues of neither.

BIDDING FAREWELL TO THE PEOPLE OF CONGO LAND

If one wishes to know the negro as he is, let him abstain from forming any opinion until he leaves the littoral and meets the native of the interior, uncorrupted by alcohol, European morals, and the love of gain either by fair means or fraud.

I have twice crossed the Congo Free State and have never come across a tribe which was not naturally good-tempered and, in most instances, hospitable and trustful.

On the day that I took my final leave



A PYTHON BEING MADE TO DISGORGE ITS DINNER—A FULL-GROWN PIG

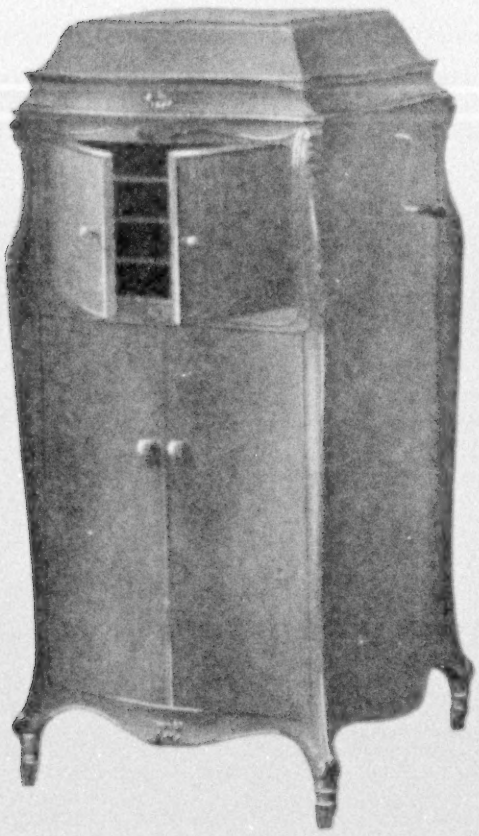
"Pythons are very common in the Congo. Some of them are as much as twenty-five feet in length and can swallow a whole goat, or, as in the case depicted, a pig. No instance, however, has come to my knowledge of a child having been killed by them. When a snake has been killed by the natives, they make it disgorge its prey, and eat the snake food as well as the snake."

of Africa my steamer was scheduled to depart at 5 in the morning. I was awakened at dawn by a considerable stir on the quay. The people of the surrounding villages had come to see me off. When my luggage was put on board, every one fought for the privilege of rendering me this last service. Then the leave-taking took place. I had to shake many black hands, pat children on the heads, and give a solemn promise to return in the near future.

I went on board and looked from the bridge down on the huge crowd, among whom was none who was not my friend. A curious mixture of feelings came over me. I was unhappy at the thought of leaving this land, and, on the other hand, I could not but feel proud to see the regret at my departure.

While preparations were being made for pushing off, a native cried out, "Let us sing Deke's (my name among the blacks) favorite song," and the whole assemblage broke into voice.

The steamer whistled thrice, the captain rang the engine-room telegraph, and off we went, while there stood my dear black friends waving their hands, cloth, branches, anything that came to hand, and shouting in the native tongue, "Good-by, Deke; don't forget us."



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is founded on a community of tastes. *Superspun*, the supreme silk shirting, typifies the companionship of men of taste and discrimination—those who appreciate the distinctive designs and lasting qualities of Empire Loomcraft Silks.

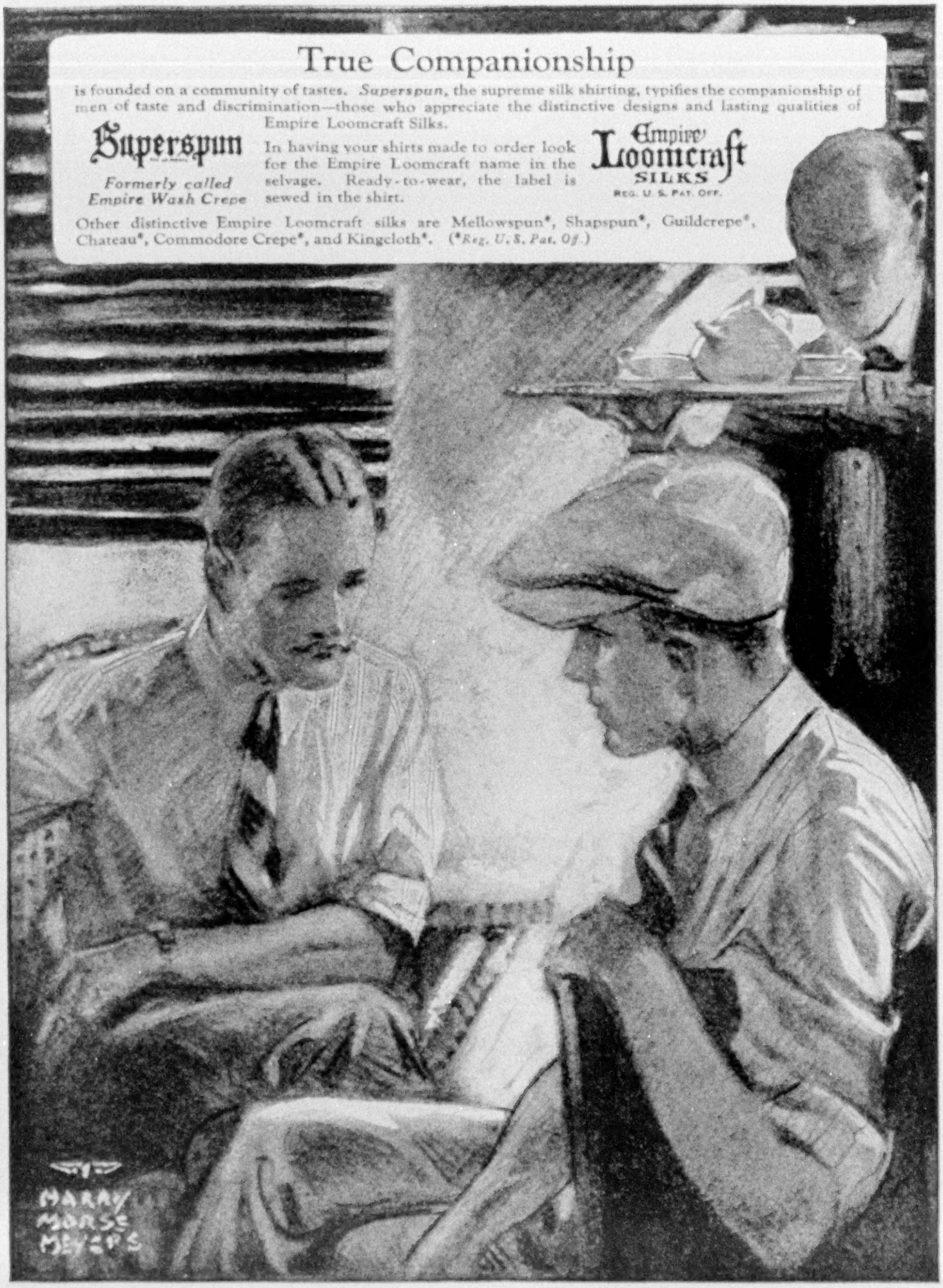
Superspun

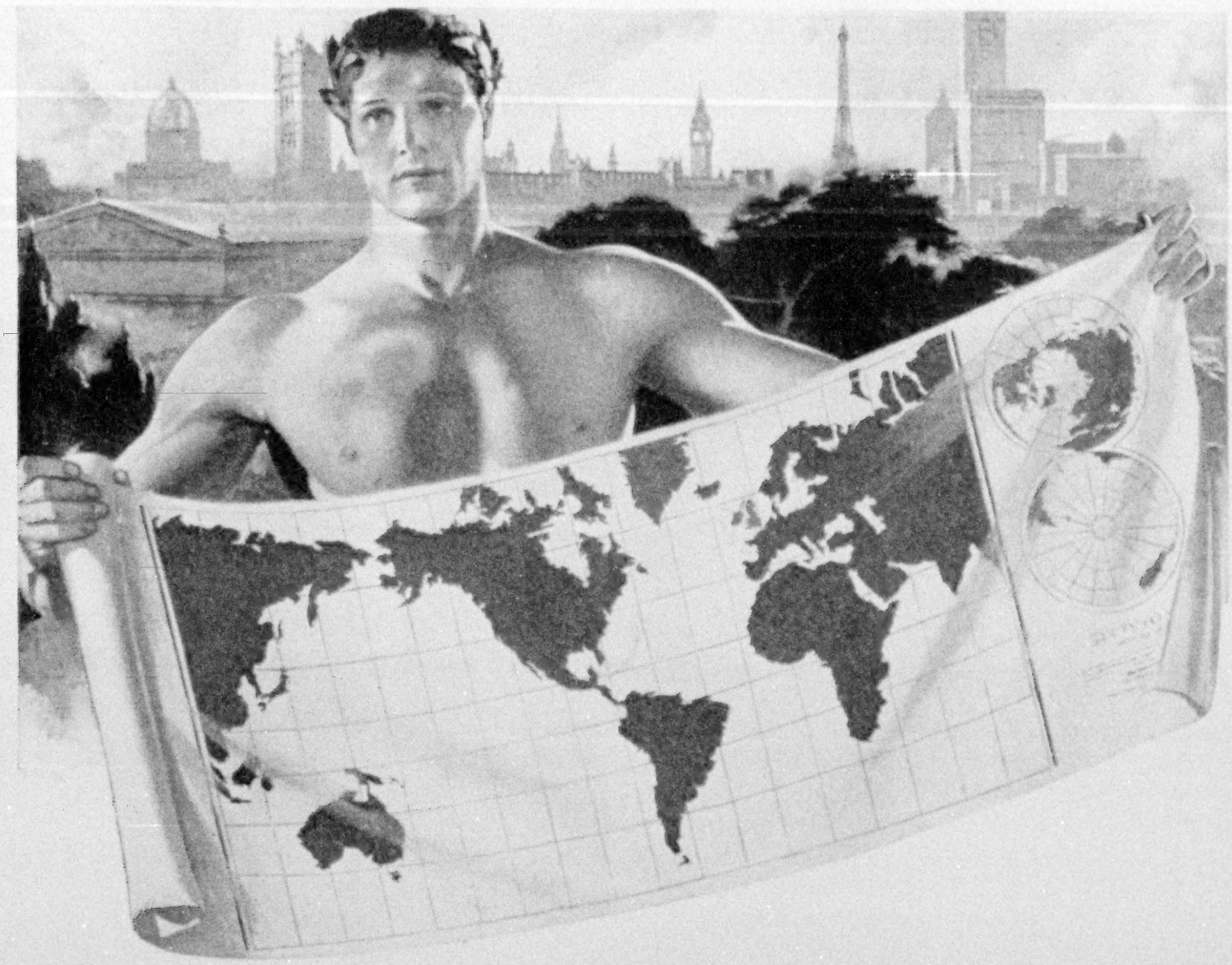
Formerly called Empire Wash Crepe

In having your shirts made to order look for the Empire Loomcraft name in the selvage. Ready-to-wear, the label is sewed in the shirt.

Empire Loomcraft SILKS
REG. U. S. PAT. OFF.

Other distinctive Empire Loomcraft silks are Mellowspun*, Shapspun*, Guildcrepe*, Chateau*, Commodore Crepe*, and Kingcloth*. (*Reg. U. S. Pat. Off.)





A wider vision for Investors

AMERICA'S helping hand which has welcomed the world's people to its shores will extend generously to the old world the needed credit to reconstruct its industries. Thus will be strengthened the foundations of law and peace and order.

In the extension of well founded credit to foreign countries, The National City Company plans to do its part. This company, through its own organization and representatives in foreign countries, is already equipped for the investigation and marketing on a large scale of the world's high character securities.

Through our Correspondent Offices in 50 American cities, many of them connected by private wires, the American investor may be placed in touch with investment opportunity, both here and abroad, and may purchase carefully chosen, recommended bonds and short term notes.

Your investment in these securities hastens the work of reconstruction, helps provide for the extension of credit, and keeps your funds earning a liberal income.

* * *

To secure a list of bonds and short term notes which we recommend for purchase, please write for AN-109.

THE NATIONAL CITY COMPANY
NATIONAL CITY BANK BUILDING
NEW YORK

You will find a National City Company Correspondent Office in 50 of the leading cities of the country.

In each of these offices you can purchase Government, Municipal, Railroad, Industrial, and Public Utility Bonds of the highest character.

Each of these offices is equipped to render unusual service to investors generally, and to bond buyers in particular.

Bonds
Acceptances and
Other High-grade Securities

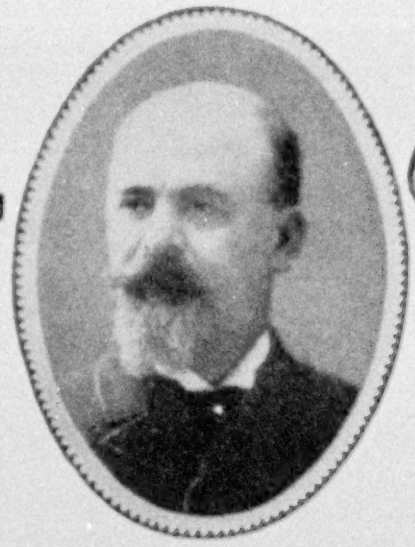
The National City Company

National City Bank Building, New York

XUM

BEEMAN'S

ORIGINAL PEPSIN CHEWING GUM



Indigestion is the most universal of human complaints

IT is rare to find a successful American business man or woman who has not suffered more or less from some slight form of indigestion, causing distress after eating.

To many an individual, dyspepsia is the price of success—the direct result of neglecting—often abusing—one's digestion, eating hurriedly, irregularly, and under high mental strain.

And yet how greatly the consequences of this neglect could be reduced by the routine, systematic use of my original pepsin chewing gum for ten to twenty minutes after every meal. An adequate flow of saliva would be assured, the digestive processes aided, and nerve tension relaxed, with its essential improvement in the gastric blood supply.

In a word, chewing Beeman's Original Pepsin Gum will bring prompt relief to many a sufferer—and in a manner pleasant, safe, and convenient.

W. E. Beeman

CHICLE

AMERICAN CHICLE COMPANY

New York Cleveland Chicago Kansas City San Francisco

"There's a fire at Mary's School!"

No use to 'phone! Try to keep calm until we can find out whether Mary has escaped.

This is happening in some city, on an average, each day or two during the school year. Read about the cause and the remedy below.

Suppose it was your girl?

NOT long ago there was a fire in a business college in the heart of the business district of a Pennsylvania city. Five hundred girls escaped; but—

Three were injured—

Seven were overcome by smoke—

Five hundred mothers are now afraid to trust their daughters in such a building.

Are you allowing that sweet young daughter of yours, or the son who will soon be able to help Dad in his business, to spend their long school hours in a building that looks all right, but is no more than a deadly fire trap?

All over the country, in large cities and little villages, thousands upon thousands of boys and girls go to school in just such dangerous buildings.

Now, since children are compelled by law to go to school, common humanity demands that their lives be safeguarded against fire.

Fire drills?—Yes. Fire escapes? Of course! *But* if the flames spread so quickly as to cut off windows and stairways, all the fire drills and fire escapes in the world will not bring back one of the pitiful little victims of official negligence. Fire never does the expected thing. The only thing to do is to stop the first tiny flicker of flame.

With Grinnell Automatic Sprinklers if a fire starts in a basement, or anywhere else, it will be kept right where it starts and be extinguished quickly. *When the fire starts the water starts.*

Men have protected some five billion dollars of their business property from fire by the use of automatic sprinklers.

Meanwhile our wonderful humanitarian institutions and our fine schools continue to burn, criminally jeopardizing thousands of lives.

With a one cent post card you might save lives. Who knows? Should you hesitate to send for a free booklet that tells just what to do?

Read *"Fire Tragedies and Their Remedy"*

If you feel too indifferent to send for a free booklet telling what to do, what right have you to blame others when a horrible calamity occurs in your town? Think of your schools and write today, now, for this intensely interesting booklet. Address General Fire Extinguisher Company, 293 West Exchange Street, Providence, R. I.

GRINNELL
AUTOMATIC SPRINKLER SYSTEM

When the fire starts the water starts

"Mention The Geographic—It identifies you"

A NEW DAY HAS DAWNED FOR TEACHING GEOGRAPHY

The Family at Work

Here is Took-a-le-kee'-ta's cousin, An'ne-vik, with her mother, father, and baby brother, Nee-wak. She likes to sit on the log and watch father carve a knife or a scraper from walrus tusks. Father's name is Koo-gak, and he is often called Koo-gak the Hunter. Her mother's name is Too'ma-sok.

On the back of mother's fur cloak she has a warm pocket, in which Nee-wak rides safe and cozy even when the cold winds sting mother's face. In the house she takes off her coat with the fur hood and ties him to her back with soft strips of leather.

She has fur slippers and seal-skin boots to wear over them. Do you think she must be too warm in her fur clothes? Oh, no! In winter she wears two fur suits, the inner with the soft fur next to her skin.

NATIONAL GEOGRAPHIC PICTURES ON SEPARATE SHEETS FOR SCHOOLS

At the request of thousands of teachers, the incomparable National Geographic pictures are now available. They are printed on heavy, glossy-coated paper, NINE BY ELEVEN inches in size, with about two hundred words of illuminating text accompanying each one. (Page 3 of the Eskimo Series is shown above in miniature, one-fifth actual size.)

Selected by a trained teacher of geography from thousands of remarkable pictures which the National Geographic Society has gathered from every out-of-the-way corner of the globe, these "talking photographs" are being welcomed by the educators of the country as a most valuable aid in their work.

These sets are now ready for delivery. Other series are being compiled.

"ESKIMO LIFE" shows caribou, whales, seals, polar bears, snow houses, grown folk and children at work and at play. 24 pictures (2 in full color).

"SAHARA LIFE" pictures the ostriches, camels, and caravans, the tent homes, the expanse of wind-tossed sand, the oasis, and date harvest. 24 pictures (2 in full color).

"THE LAND, THE WATER, THE AIR" illustrates cape, bay, delta, divide, volcano, geyser, etc., 48 pictures (4 in full color).

"THE UNITED STATES" presents the great rivers, mountain peaks, natural wonders, parks, and chief public buildings of our own country. 48 pictures (4 in full color).

THE NATIONAL GEOGRAPHIC SOCIETY
PICTORIAL GEOGRAPHY

(TRADE-MARK)
Reg. U. S. Pat. Off.

These Pictures are obtainable only from Washington Headquarters. Order at once.

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Department B, National Geographic Society,
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....., 1919.

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IN nearly every important city and industrial center "Fuller-Built" Landmarks attest the part the George A. Fuller Company has played in building construction work since its organization in 1885.

The Pennsylvania and Commodore Hotels were built and completed at the same time that the company was building the mammoth U. S. Army Warehouses and Wharfs at New Orleans and carrying on important work aggregating over 51 million dollars in 38 cities.

The experience which made this record possible is available to architects and owners of property who contemplate a building operation, and will be found particularly valuable at this time when such unusual conditions confront the man about to build.

Consultation is solicited through the company's various offices, as noted below.

George A. Fuller Company

New York	Washington	Chicago
Boston	Baltimore	Detroit
Philadelphia	Pittsburgh	St. Louis
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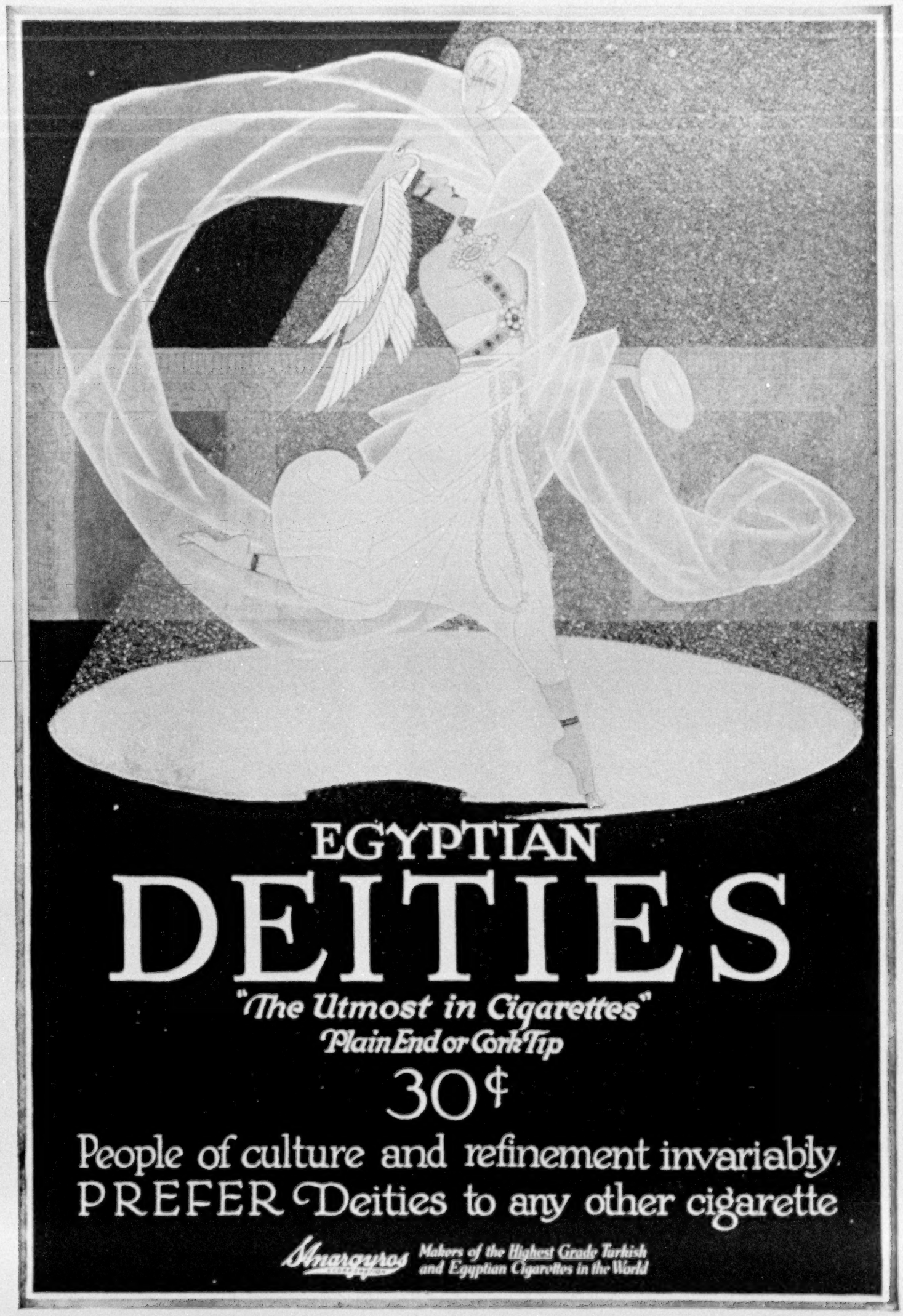
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"The Utmost in Cigarettes"
Plain End or Cork Tip
30¢
People of culture and refinement invariably
PREFER Deities to any other cigarette
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and Egyptian Cigarettes in the World

Why That Tartar

If You Keep Teeth Clean?

All Statements Approved by High Dental Authorities

It is Due to Film

TARTAR shows that teeth are not kept clean. The basis is a slimy film. If you removed it daily tartar would not form.

That film on your teeth causes most tooth troubles. It is ever-present, ever-forming. You can feel it with your tongue.

The film is what discolors, not the teeth. It holds food substance which ferments and forms acid. It holds the acid in contact with the teeth to cause decay.

Millions of germs breed in it. They, with tartar, are the chief cause of pyorrhea.

This film is viscous, so it clings. It gets into crevices and stays. The ordinary dentifrice does not dissolve it. The tooth brush leaves much of it intact. That is why the best-brushed teeth so often discolor and decay.

Every dentist knows this. Dental science has for years sought a way to combat that film. That way has now been found. And, for daily use, it is embodied in a dentifrice called Pepsodent.

We ask you to write for a free 10-Day Tube and learn what it means to your teeth.

Watch It Disappear

Get this free tube of Pepsodent and use like any tooth paste. Note how clean the teeth feel after using. Mark the absence of the slimy film. See how the teeth whiten as the fixed film disappears. You will know in a few days what clean teeth mean.

Pepsodent is based on pepsin, the digestant of albumin. The film is albuminous matter. The object of Pepsodent is to dissolve it, then to constantly combat it.

The way seems simple, but for long it seemed impossible. Pepsin must be activated, and the usual method is an acid harmful to the teeth.

Then the invention of a harmless activating method made this application possible. And it seems to solve the problem of this tooth-destroying film.

Pepsodent has been proved under able authorities by many clinical tests. Leading dentists all over America have come to endorse and adopt it. Now we urge you to try it.

Pepsodent PAT. OFF. REG. U. S.

The New-Day Dentifrice

A Scientific Product—Sold by Druggists Everywhere

Send the Coupon for a 10-Day Tube

Note how clean the teeth feel after using. Mark the absence of the slimy film. See how the teeth whiten as the fixed film disappears.

Compare the results with the methods you now use. Judge for yourself which best protects the teeth. Do this for your sake and your children's sake. Cut out the coupon now. (223)

Ten-Day Tube Free

THE PEPSODENT COMPANY,
Dept. 698, 1104 S. Wabash Ave., Chicago, Ill.

Mail 10-Day Tube of Pepsodent to

Name .....

Address .....

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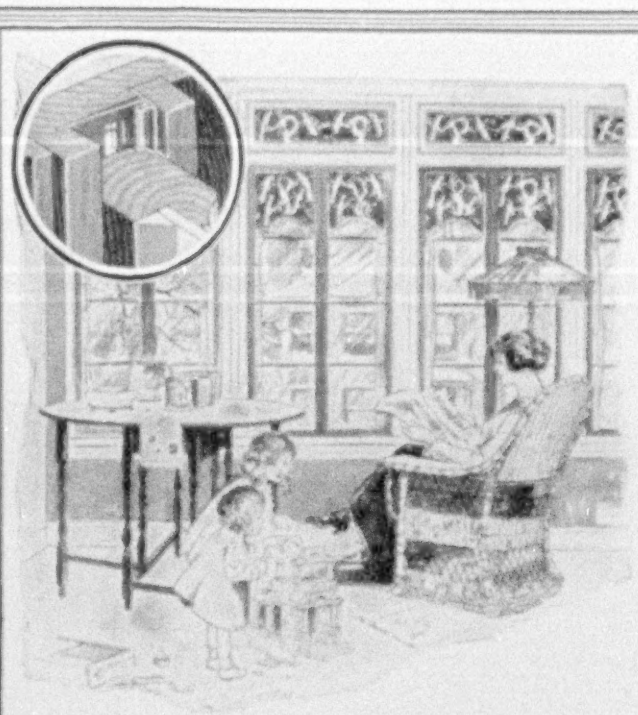
Karpen
Guaranteed Upholstered
Furniture
CHICAGO NEW YORK

KARPEN *furniture*

BECAUSE of its beauty, its fineness and its individualism, Karpen Furniture has no peer in furniture, either of the past or present. The institutional aim is to interpret the high ideals of the old masters in modern form. Karpenesque Upholstered Furniture is the realization of that aim. For sale by leading dealers everywhere.

S. KARPEN & BROS.
CHICAGO - NEW YORK



Don't Be Afraid of Casement Windows

MONARCH

METAL WEATHER STRIPS

Make Them Safe and Practical

The artistic casement opening has been a source of discomfort to the house owner because of the continual leakage of rain and wind.

MONARCH strips seal the unavoidable cracks around the casement frame, making them weather-tight to the ingress of water and cold and air-tight to the escape of money-made heat in winter.

In the sun parlor, on the sleeping porch, wherever a 100 per cent opening is required, MONARCH strips give operating efficiency and a guarantee of satisfaction.

Look up "MONARCH" in the phone book, or write us for name of our nearest representative.

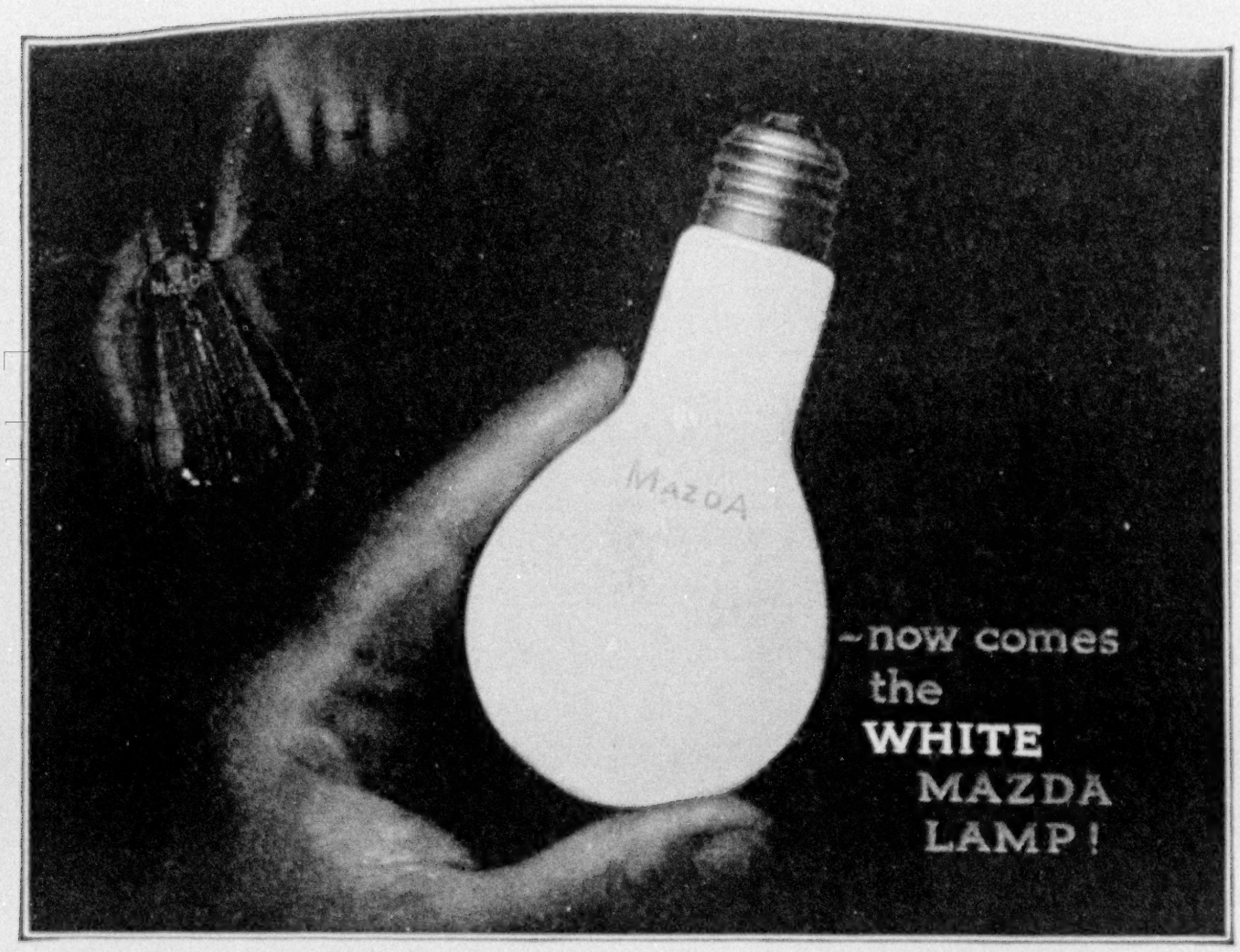
Monarch Metal Weather Strip Co.
5100 Penrose Street
St. Louis, U. S. A.

"Weather strips are 100 per cent fuel conservation"
U. S. Fuel Administration
P. B. NOYES, *Director of Conservation*
August 23, 1918

MONARCH
METAL WEATHER STRIPS

MAZDA

"Not the name of a thing, but the mark of a service"



ALSO on this new lamp—the WHITE MAZDA—you find the mark of MAZDA Service. The high efficiency of this lamp, and its softened and gratefully mellowed brilliance are fresh indications of the fruitfulness of MAZDA Service in its constant search for better light.

MAZDA is the trademark of a world-wide service to certain lamp manufacturers. Its purpose is to collect and select scientific and practical information concerning progress and developments in the art of incandescent lamp manufacturing and to distribute this information to the companies entitled to receive this service.

MAZDA Service is centered in the Research Laboratories of the General Electric Company at Schenectady, N. Y. The mark MAZDA can appear only on lamps which meet the standards of MAZDA Service. It is thus an assurance of quality. This trademark is the property of the General Electric Company.

47x-2

"Mention The Geographic—It identifies you"

XUM

DODGE BROTHERS 4-DOOR SEDAN

"The Pullinest Belt"

The men in a certain munitions shop were on piecework. There always was a "howl" when a new belt was put on. They claimed no new belt would pull like an old one.

As an experiment SparOak Belting was installed. Immediately the "howl" ceased, because production increased and, of course, the operators received more pay.

Today there is never a complaint when a new belt is installed, providing it is one of the "pullinest" kind, as they call SparOak.

SparOak
Belting

SparOak Belts grip from the start. A two-ply belt, the pulley side is G & K Spartan, a leather with the greatest pulley-gripping power ever attained in a belting material; the outer side is the finest quality G & K oak-tanned stock.

The oak-tanned outer ply gives rugged endurance to withstand the severest service conditions. The Spartan leather next the pulley insures a firm grip.

If you have a drive that is troubling you, write us about it. The Graton & Knight Standardized Series includes belts for every kind of drive. Our booklet on Standardization in belting describes all of them. It is sent free on request.

The Graton & Knight Mfg. Co.
Worcester, Mass., U. S. A.
Oak Leather Tanners, Makers of Leather Belting and Leather Products
Branches and Distributors in all Principal Cities

Graton & Knight
Standardized Series
Leather Belting
Tanned by us for belting use

"Mention The Geographic—It identifies you"

XUM

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Annual membership in U. S., $2.00; annual membership abroad, $3.00; Canada, $2.50; life membership, $50. Please make remittances payable to National Geographic Society, and if at a distance remit by New York draft, postal or express order.

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IN THE

NATIONAL GEOGRAPHIC SOCIETY

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PLEASE DETACH AND FILL IN BLANK BELOW AND SEND TO THE SECRETARY

.....191

To the Secretary, National Geographic Society,
Sixteenth and M Streets Northwest, Washington, D. C.:

I nominate .....

Address .....

.....

for membership in the Society

.....

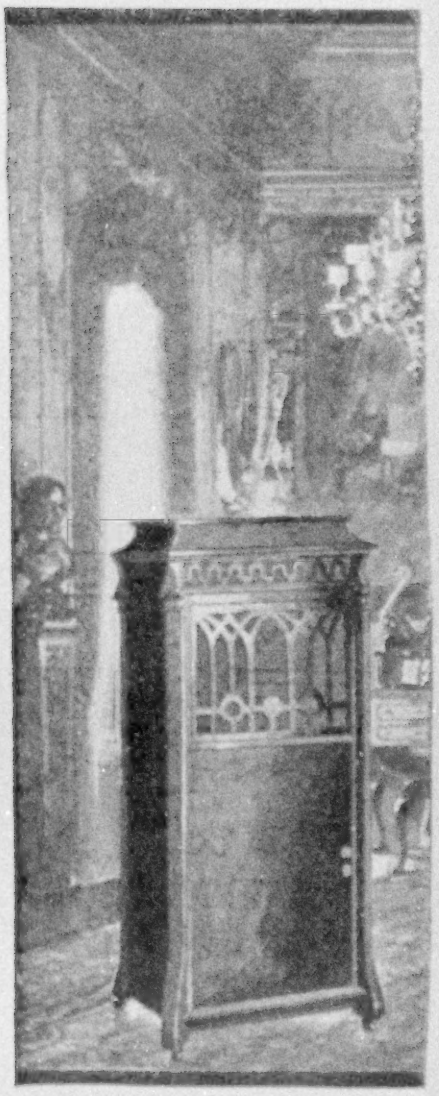
.....

Name and Address of Nominating Member

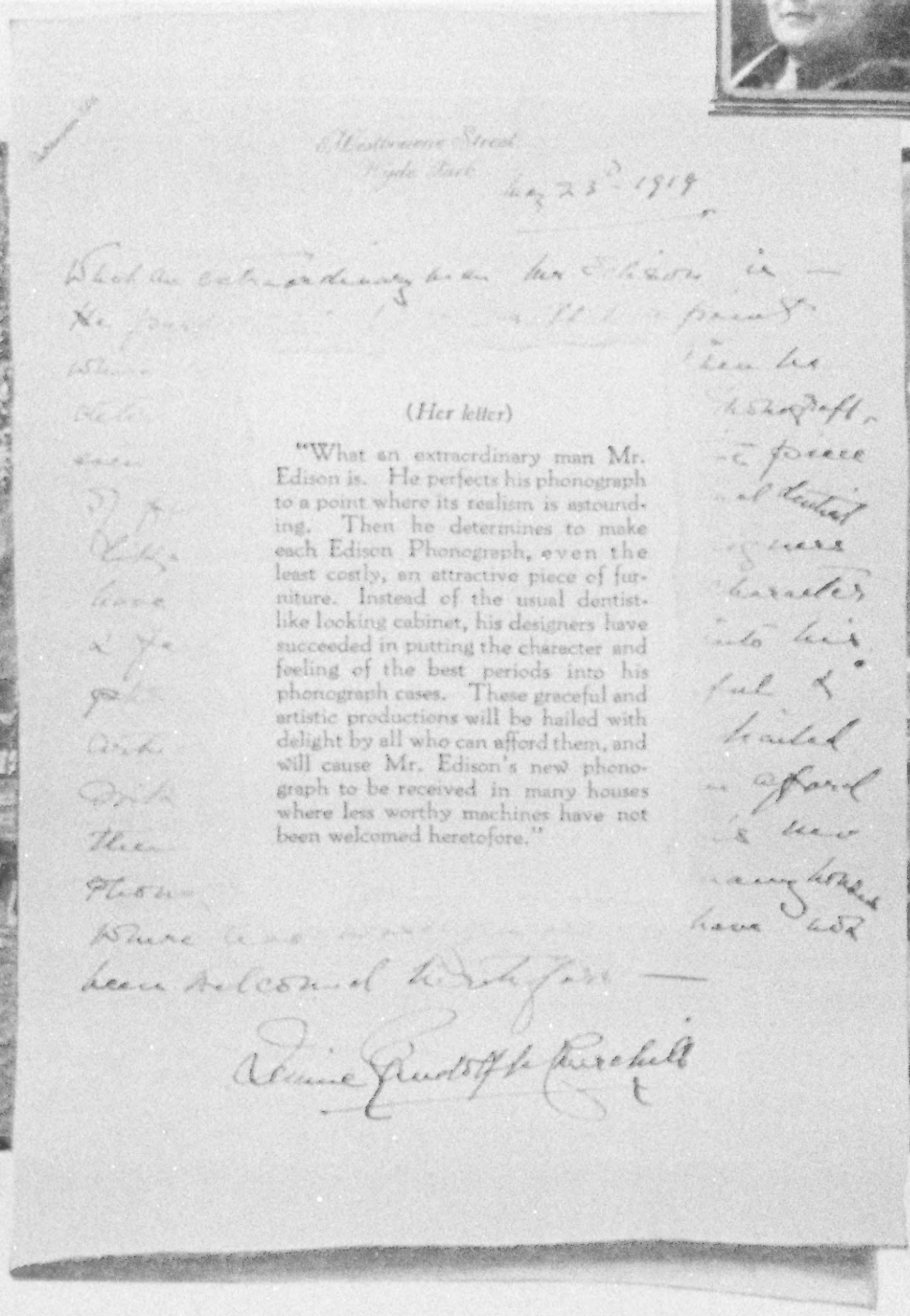
A Letter from Lady Randolph Churchill

Lady Randolph Churchill

Lady Randolph Churchill is the mother of Winston Churchill, Secretary for War in the British Government and the sister-in-law of the Duke of Marlborough.



This interior shows the Chippendale Cabinet. There are sixteen other Edison Period Phonographs



8 Westminster Street
Hyde Park
Aug 23rd 1919

(*Her letter*)

"What an extraordinary man Mr. Edison is. He perfects his phonograph to a point where its realism is astounding. Then he determines to make each Edison Phonograph, even the least costly, an attractive piece of furniture. Instead of the usual dentist-like looking cabinet, his designers have succeeded in putting the character and feeling of the best periods into his phonograph cases. These graceful and artistic productions will be hailed with delight by all who can afford them, and will cause Mr. Edison's new phonograph to be received in many houses where less worthy machines have not been welcomed heretofore."

Yours Randolph S Churchill

THIS letter comes from the best furnished house in all England. Its writer is England's greatest authority on furniture. Praise from Lady Randolph Churchill is the Old World's stamp of approval on Mr. Edison's adaptations of Europe's richest furniture treasures.

A reading of her letter, however, shows that Lady Churchill has been led by her furniture-knowledge into a misconception. So artistically conceived, so exquisitely made are these Edison Period Cabinets that she has drawn the very natural conclusion that they can be afforded by only the fortunate few. This is absolutely contrary to the fact. Mr. Edison has placed authentic period cabinets within the reach of every one. He has required that a period cabinet be developed for each New Edison—even the lowest-priced models.

These wonderful instruments in their beautiful cases are pictured and described in our new book, "Edison and Music." Write for it. Thomas A. Edison, Inc., Orange, N. J.

The NEW EDISON

"The Phonograph with a Soul"

"Mention The Geographic—It identifies you"

PYORRHOCIDE
POWDER
ANTISEPTIC

for Pyorrhea prevention

Tender, Soft, Bleeding Gums

are the first symptoms of pyorrhea. If unchecked, pyorrhea causes loss of teeth and menaces health.

Pyorrhocide Powder was scientifically compounded for the specific purpose of restoring and maintaining gum health. It is the only dentifrice whose value in treating and preventing pyorrhea has been demonstrated in clinics devoted exclusively to pyorrhea research and oral prophylaxis. That is why it is so widely prescribed by the dental profession.

If your gums show pyorrhetic symptoms, Pyorrhocide Powder will aid in restoring them to a healthy condition. If your gums are healthy, Pyorrhocide Powder will keep them so. It cleans the teeth most effectively; removes the mucoid deposits and daily accretions.

Pyorrhocide Powder is economical because a dollar package contains six months' supply. Sold by leading druggists and dental supply houses.

Free Sample

Write for free sample and our booklet on Prevention and Treatment of Pyorrhea.

The Dentinol & Pyorrhocide Co., Inc.
Sole Distributors
1478 Broadway, N.Y.

Scientifically Perfected by Clinical Research

We shall continue to offer through exhaustive scientific research, and by unlimited clinical facilities, only such a dentifrice as is proved most effective—in promoting tooth, gum, and mouth health.

L. V. Slaught Pres

GOLFLEX

Suits Coats Dresses Skirts

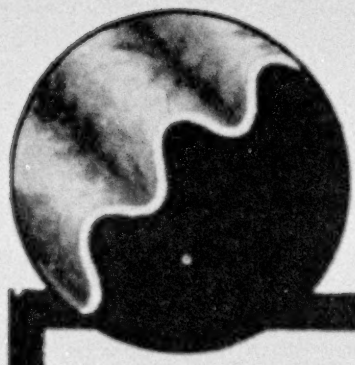
Fall Modes of Patrician Simplicity

Ultra-correct but never extreme, GOLFLEX suits and dresses have a quiet distinction that defies imitation.

The worsted jersey from which they are tailored is ideal for sport wear, while their thoroughbred air makes them appropriate for any daytime occasion.

See them at your favorite store, or write direct to

WILKIN & ADLER
13 East 26th Street
New York



29 TIMES STRONGER THAN PLAIN STEEL

Witt's Can and Pail are made of heavy, deeply corrugated steel—29 times stronger than plain steel. They are dent-proof. A special galvanizing process makes them rust-proof. They outlast two ordinary cans. Special lids that fit air-tight make Witt's Can and Pail absolutely sanitary. They are sealed tight as a vault. Odors and garbage are kept *in*; flies and dogs kept *out*. Buy Witt's for your home. It saves you money. Write for booklet and name of your nearest Witt dealer.

THE WITT CORNICE CO.
Dept. B-3, Cincinnati, Ohio
Look for the Yellow Label

WITT'S CAN & PAIL

The Dealer in Memorials

An Appreciation

THE erection of memorials to the memory of the departed is a custom as old as the ages. A custom as sublime as it is venerable—linking, as it does, the past with the future—the earthly life with the life to come.

IT is unfortunate but true, however, that the heart promptings of our forefathers which moved them to place in their burying grounds evidences of their love, were not always guided by proper advice in the selection of materials that would withstand the destructive influences of time.

SO it is that, in many of our older cemeteries, many monuments and markers bearing the noblest sentiments have crumbled and broken away, and the records which they were erected to perpetuate are lost.

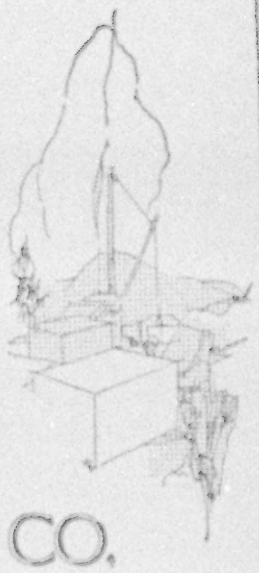
TODAY, in nearly every hamlet and town in this country, there is a reliable man who can guide you properly in the selection of material. He is the local dealer in memorials. It is his business to know the relative time and weather resisting qualities of various stones—their cost—the proper method of setting—the appropriateness of different designs—and how and of what material they can best be executed. He is a dealer in sentiment in the rough.

AS the average man or woman purchases a memorial only twice in a lifetime, it would seem comparatively easy for the dealer to consider the selection of material as of little importance so long as the customer was pleased in design. But, so highly do the majority of these men regard their calling that, in nearly half a century of supplying them with "Rock of Ages," we have had little or no evidence of cases in which they have recommended or sold imperfect stones.

IN fact, so much pride do they take in their work that, in spite of constant enlargement of our facilities, it is still with difficulty that we can keep pace with their demands.

WE do not mean to imply that "Rock of Ages" is the only time and element resisting material. But its qualities are so well known it has made us the largest producers in the Barre district — the Granite Center of the World. And this despite the fact that the local dealer in memorials in many cases when he has recommended and specified "Rock of Ages," could have substituted a less durable material at profit to himself.

These facts are printed here that you may have a better conception of the integrity and highmindedness of the dealer in memorials. We wish, also, to express a feeling of keen appreciation of the service he renders his community and the country at large, in perpetuating the finest sentiments and best traditions of our land.



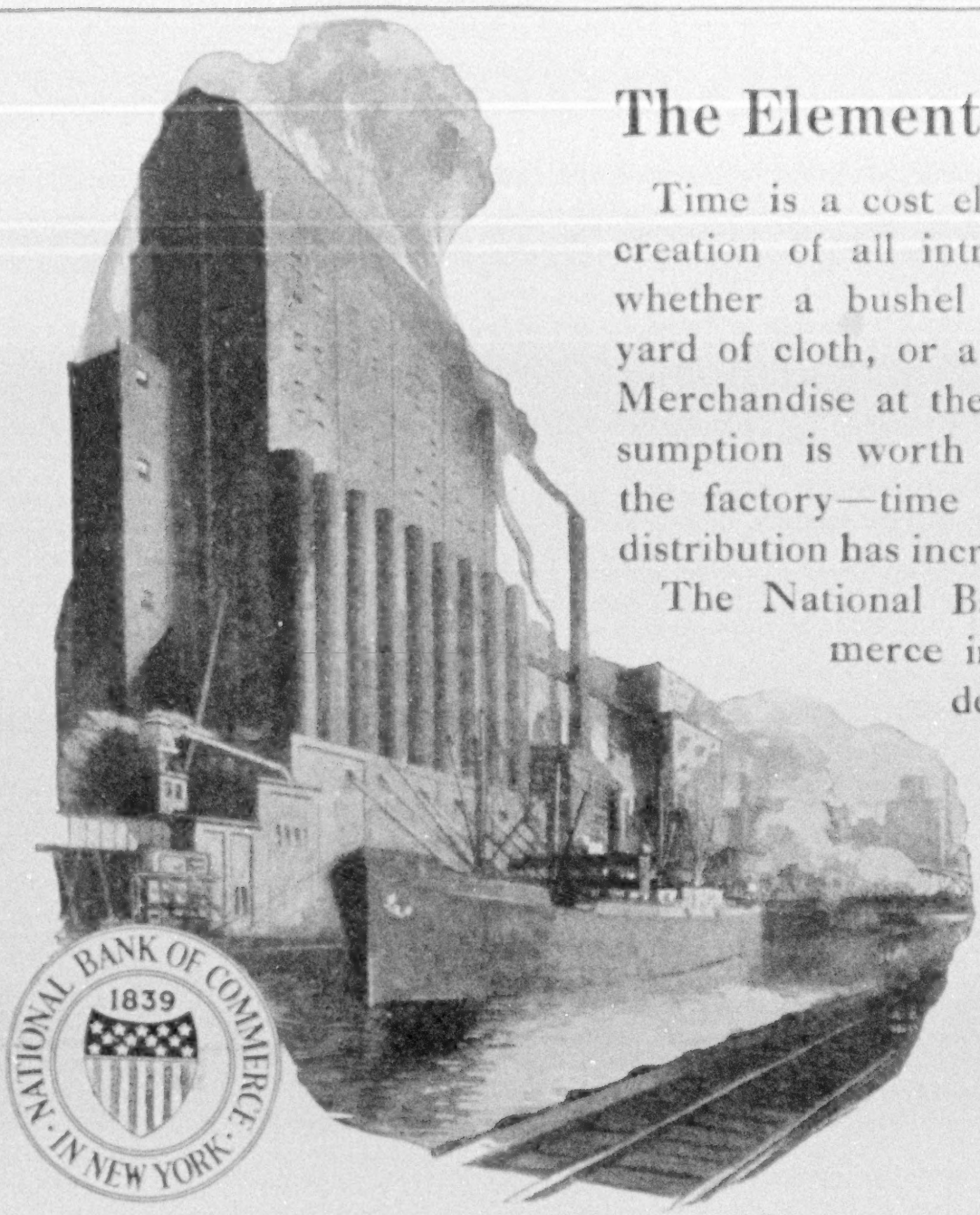
BOUTWELL, MILNE & VARNUM CO.

Quarriers of

ROCK OF AGES

Department H Montpelier, Vermont

Quarries at Barre, Vermont — The Granite Center of the World



The Element of Time

Time is a cost element in the creation of all intrinsic values, whether a bushel of wheat, a yard of cloth, or a ton of steel. Merchandise at the point of consumption is worth more than at the factory—time consumed in distribution has increased its cost.

The National Bank of Commerce in New York devotes its vast resources to financing this element of time.

NATIONAL BANK OF COMMERCE · IN NEW YORK · 1839

National Bank of Commerce in New York

Capital, Surplus and Undivided Profits Over Fifty Million Dollars

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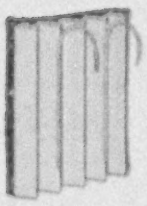
SAVO AIR MOISTENER



FILL WITH WATER, HANG ON BACK OF ANY RADIATOR OUT OF SIGHT

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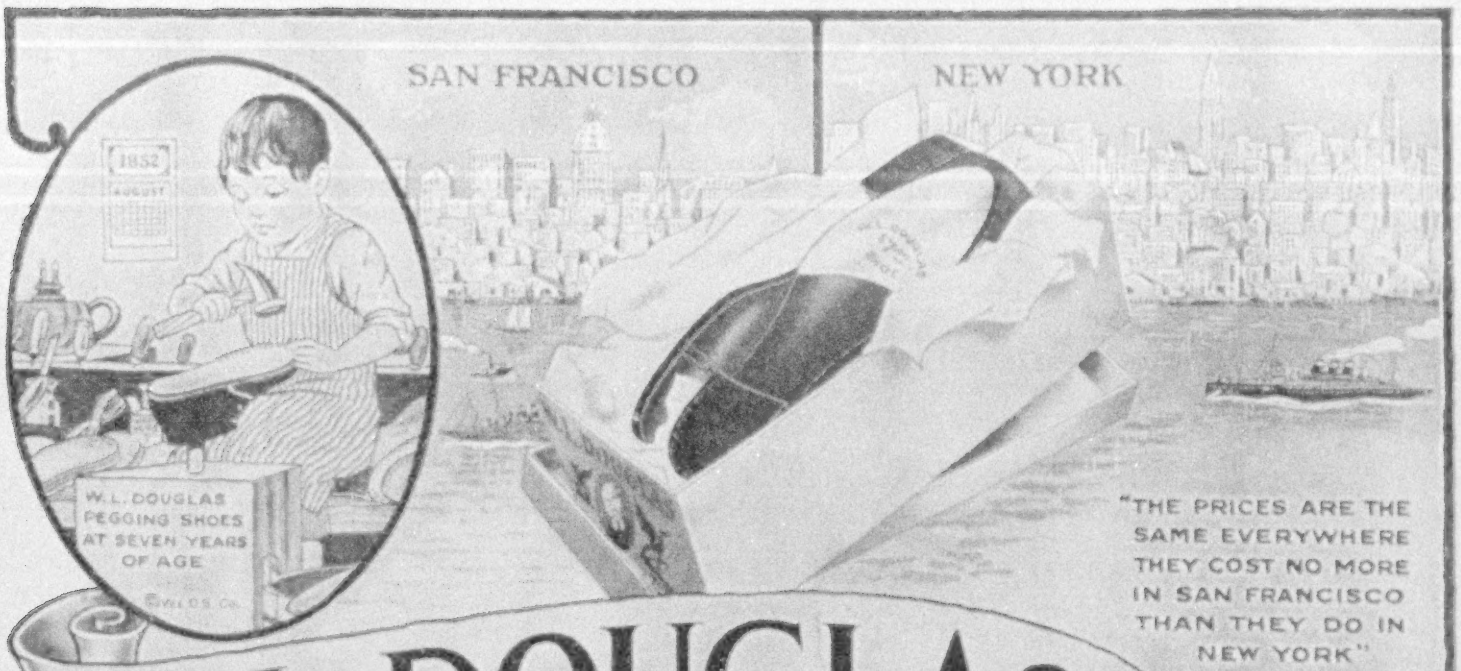

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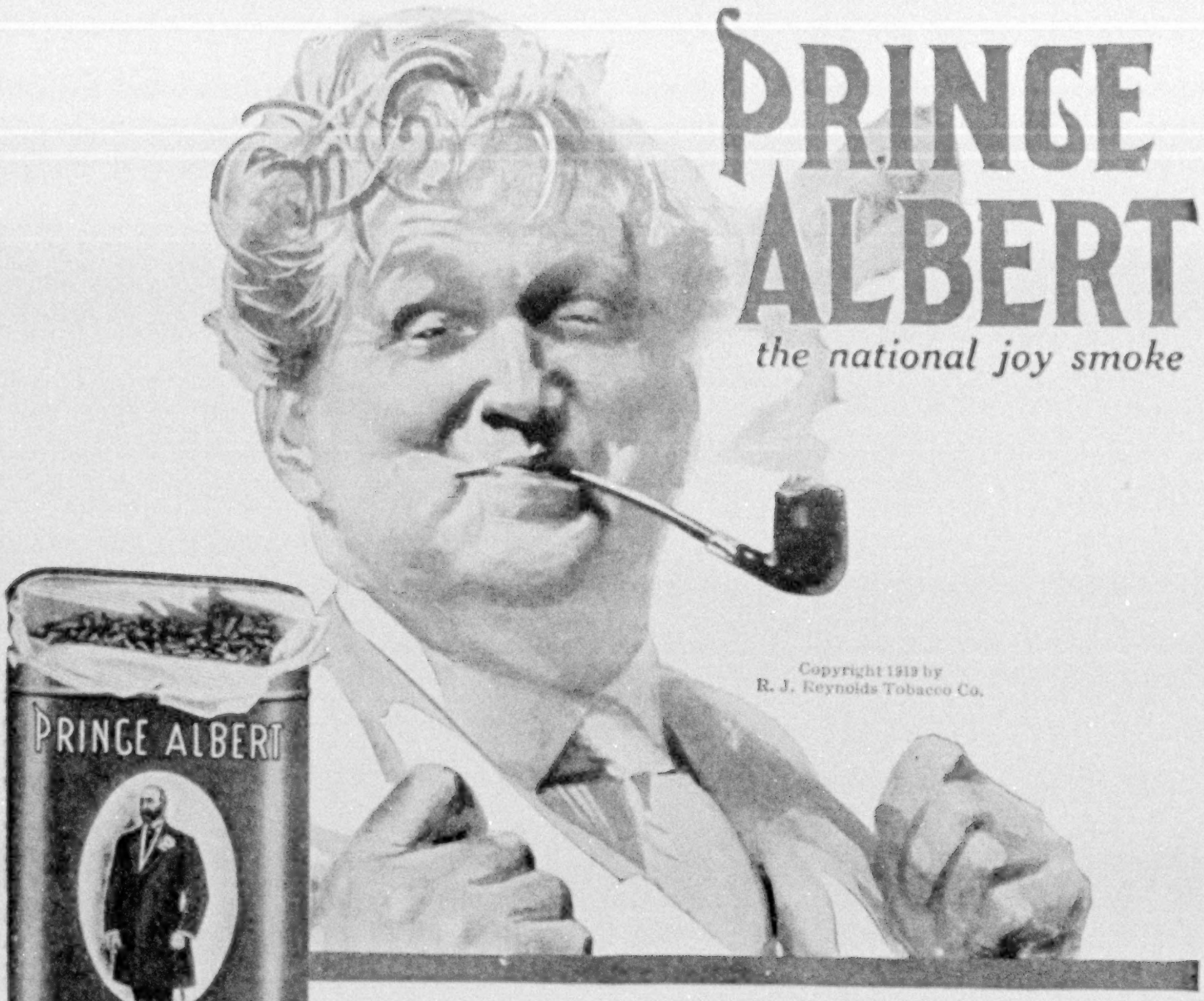

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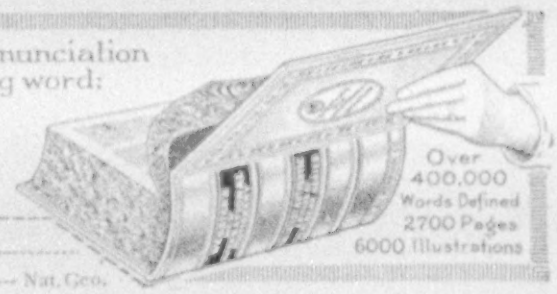

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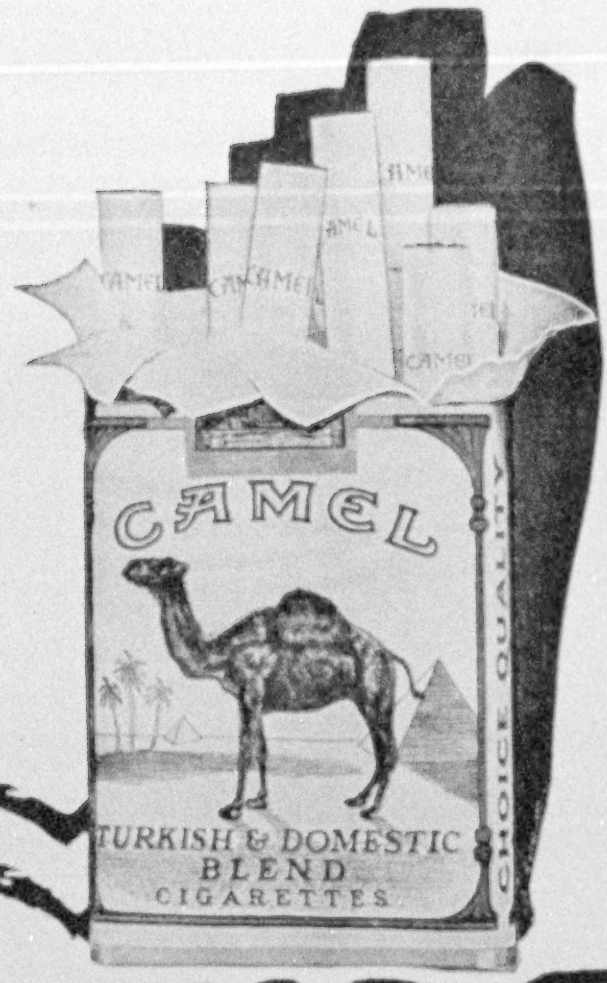

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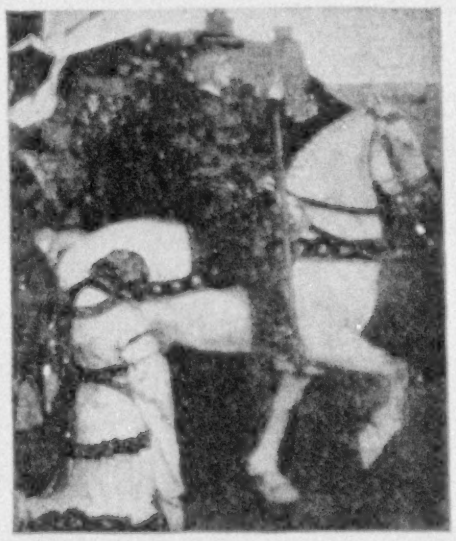

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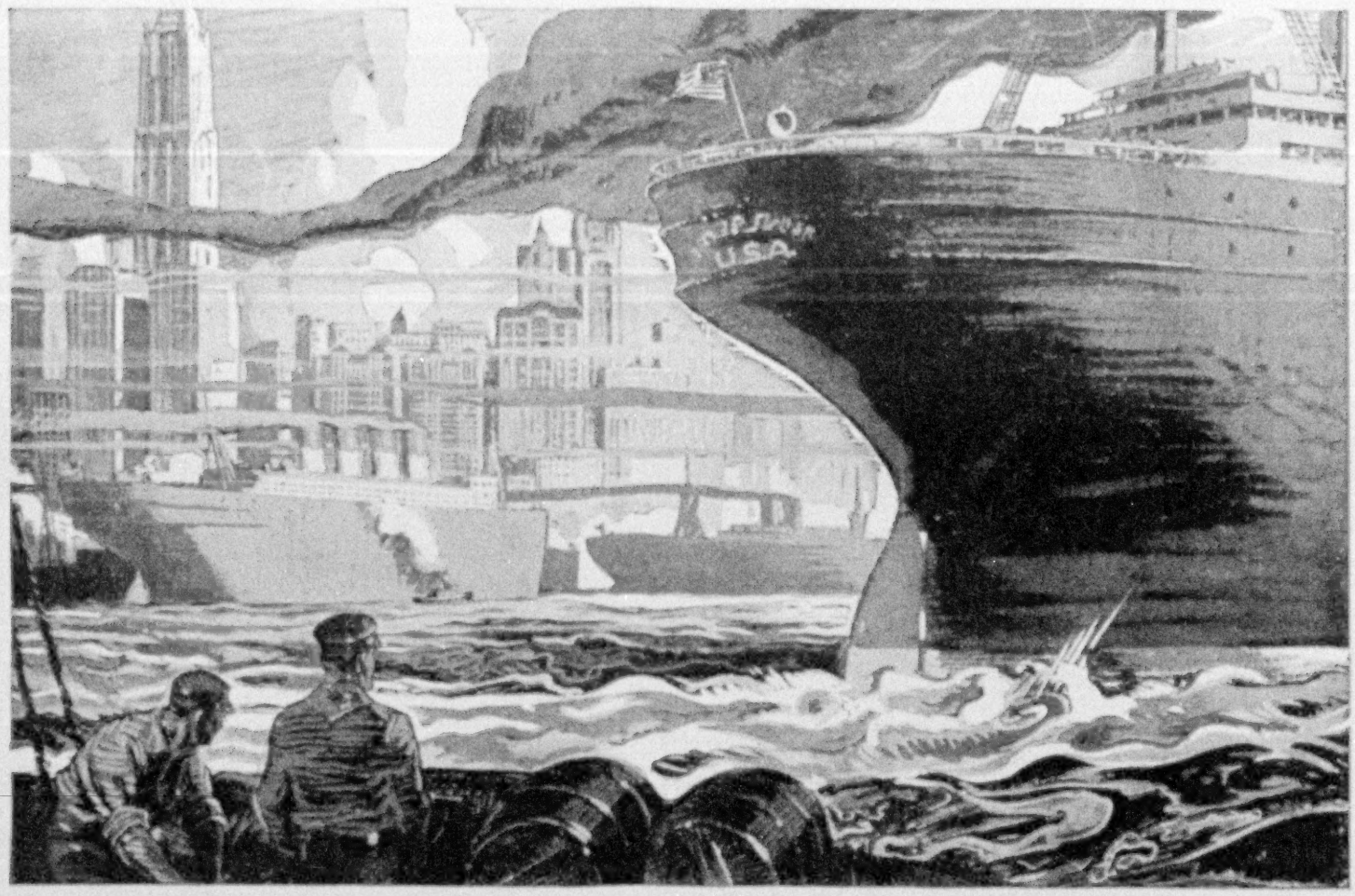

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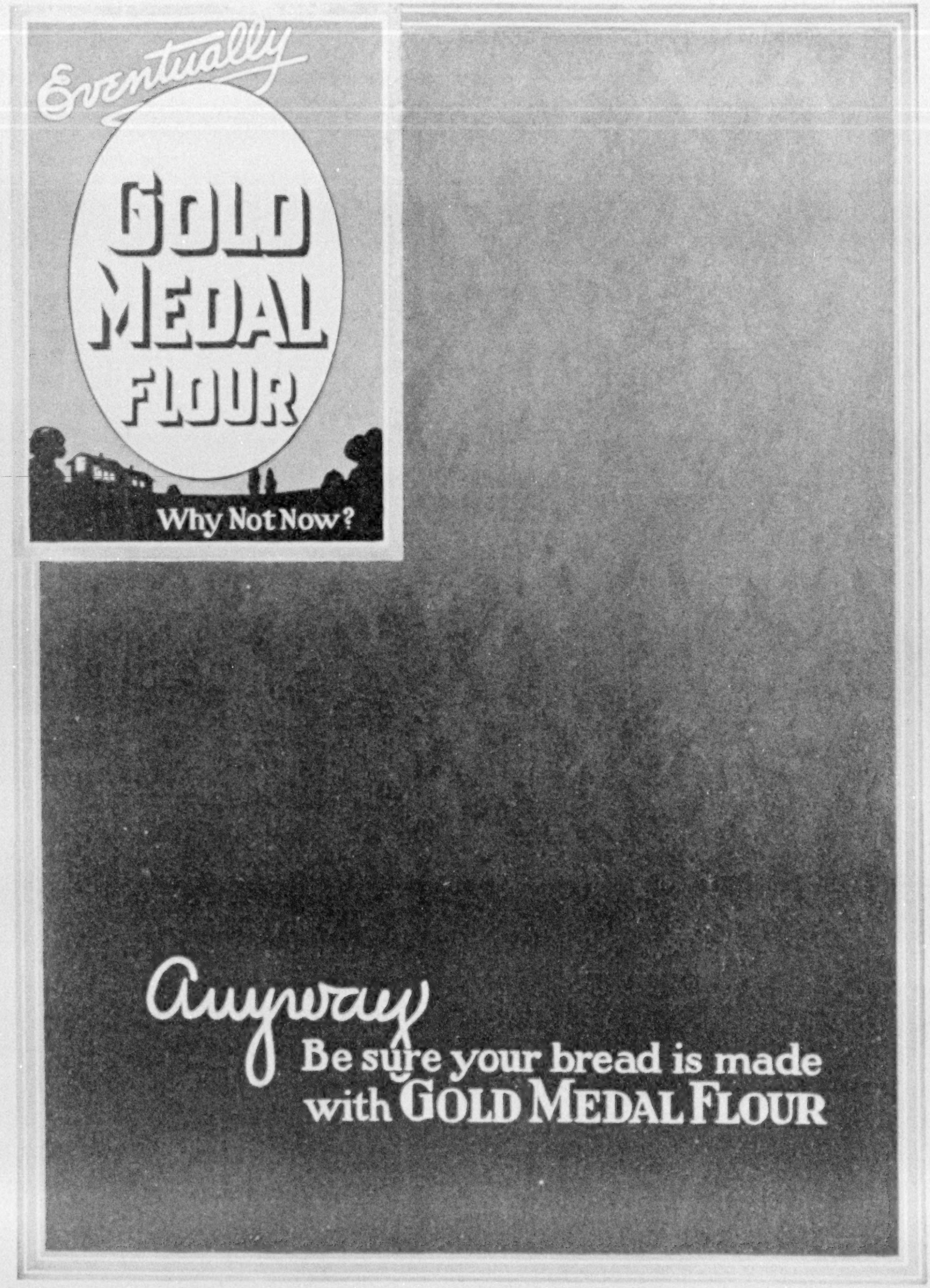
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